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# University of Birmingham.



CALENDAR FOR THE SESSION  
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1907.



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## SEPTEMBER—1907.

1	S	
2	M	Last day for Entry for Matriculation Examination.
3	Tu	
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	
10	Tu	
11	W	
12	Th	
13	F	
14	S	
15	S	
16	M	
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	Matriculation and Supplementary Examinations commence.
24	Tu	
25	W	
26	Th	
27	F	
28	S	
29	S	<i>MICHAELMAS DAY.</i>
30	M	

## OCTOBER - 1907.

**OPENING OF UNIVERSITY SESSION.**

1	Tu	Last day for applications for Walter Myers Travelling Studentship.
2	W	Meeting of the Council.
3	Th	Last day for applications for the Sydenham Scholarships.
4	F	
5	S	
6	§	
7	M	
8	Tu	
9	W	Meeting of the Faculty of Arts.
10	Th	Meeting of the Faculty of Science.
11	F	
12	S	Last day for applications for Entrance Scholarship for Dental Students.
13	§	
14	M	
15	Tu	Meeting of the Library Committee.
16	W	Meeting of the Senate.
17	Th	
18	F	
19	S	
20	§	
21	M	
22	Tu	
23	W	
24	Th	
25	F	
26	S	
27	§	
28	M	
29	Tu	
30	W	
31	Th	

## NOVEMBER—1907.

1	F	
2	S	
3	S	
4	M	Last day for entry for M.B., Ch.B., and L.D.S. Exams.
5	Tu	
6	W	Meeting of the Council.
7	Th	
8	F	
9	S	King Edward VII. born 1841.
10	S	
11	M	
12	Tu	
13	W	Meeting of the Faculty of Arts.
14	Th	Meeting of the Faculty of Science.
15	F	
16	S	
17	S	
18	M	
19	Tu	
20	W	Meeting of the Senate.
21	Th	
22	F	
23	S	
24	S	
25	M	M.B., Ch.B., and L.D.S. Examinations commence.
26	Tu	
27	W	
28	Th	
29	F	
30	S	

## DECEMBER—1907.

1	S	
2	M	
3	Tu	Meeting of the Faculty of Arts.
4	W	Meeting of the Council.
5	Th	Meeting of the Faculty of Science.
6	F	
7	S	
8	S	
9	M	Terminal Examinations commence.
10	Tu	
11	W	Meeting of the Senate.
12	Th	
13	F	
14	S	WINTER TERM ENDS.
15	S	
16	M	Last day for entry for D.P.H. and B.Sc. in Public Health Exams.
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	
24	Tu	
25	W	CHRISTMAS DAY.
26	Th	Bank Holiday.
27	F	
28	S	
29	S	
30	M	
31	Tu	

## JANUARY—1908.

1	W	Last day for applications for 1851 Exhibition Science Research Scholarship.
2	Th	Meeting of the Council.
3	F	
4	S	
5	S	
6	M	
7	Tu	
8	W	
9	Th	
10	F	
11	S	
12	S	
13	M	<b>SPRING TERM COMMENCES.</b> D.P.H. and B.Sc. in Public Health Examinations commence.
14	Tu	Meeting of the Library Committee.
15	W	Meeting of the Faculty of Arts.
16	Th	Meeting of the Faculty of Science.
17	F	
18	S	
19	S	
20	M	
21	Tu	
22	W	Queen Victoria died, 1901. Meeting of the Senate.
23	Th	
24	F	
25	S	
26	S	
27	M	
28	Tu	
29	W	
30	Th	
31	F	

## FEBRUARY—1908.

1	S	
2	G	
3	M	
4	Tu	
5	W	Meeting of the Council.
6	Th	
7	F	
8	S	
9	G	
10	M	
11	Tu	
12	W	Meeting of the Faculty of Arts.
13	Th	Meeting of the Faculty of Science.
14	F	
15	S	
16	G	
17	M	
18	Tu	
19	W	Meeting of the Senate.
20	Th	
21	F	
22	S	
23	G	Sir Josiah Mason born, 1795.
24	M	
25	Tu	
26	W	
27	Th	
28	F	
29	S	

## MARCH--1908.

1	S	
2	M	
3	Tu	
4	W	ASH WEDNESDAY. Meeting of the Council.
5	Th	
6	F	
7	S	
8	S	
9	M	
10	Tu	
11	W	Meeting of the Faculty of Arts.
12	Th	Meeting of the Faculty of Science.
13	F	
14	S	
15	S	
16	M	
17	Tu	
18	W	Meeting of the Senate.
19	Th	
20	F	
21	S	
22	S	
23	M	Terminal Examinations commence
24	Tu	Royal Charter of University of Birmingham granted, 1900.
25	W	LADY DAY.
26	Th	
27	F	
28	S	SPRING TERM ENDS.
29	S	
30	M	
31	Tu	

## APRIL—1908.

1	W
2	Th
3	F
4	S
5	<b>S</b>
6	M
7	Tu
8	W
9	Th
10	F
11	S
12	<b>S</b>
13	M
14	Tu
15	W
16	Th
17	F <i>GOOD FRIDAY.</i>
18	S
19	<b>S</b> <i>EASTER DAY.</i>
20	M <i>EASTER MONDAY.</i> Bank Holiday.
21	Tu
22	W <b>SUMMER TERM COMMENCES.</b>
23	Th
24	F
25	S
26	<b>S</b>
27	M
28	Tu
29	W
30	Th

Last day for applications for Heslop Memorial Medal and Constance Naden Medal.

## MAY—1908.

		Last Day for Entry for University Exams. (excepting Final M.B., Ch.B., for Past Students; M.D., Ch.M. Exams., and D.P.H. and B.Sc. in Public Health Exams.).
1	F	
2	S	
3	S	
4	M	Last day for applications for Ascough Scholarship.
5	Tu	
6	W	Meeting of the Council.
7	Th	
8	F	Last day for receiving Theses for University Examinations. Last day for entry for M.B., Ch.B. for Past Students, M.D., Ch.M., and D.P.H., and B.Sc. in Public Health Exams.
9	S	
10	S	
11	M	
12	Tu	Meeting of the Library Committee.
13	W	Meeting of the Faculty of Arts.
14	Th	Meeting of the Faculty of Science.
15	F	
16	S	
17	S	
18	M	
19	Tu	
20	W	Meeting of the Senate.
21	Th	
22	F	
23	S	
24	S	
25	M	
26	Tu	
27	W	
28	Th	
29	F	
30	S	
31	S	

## JUNE—1908.

1	M	Last day for application for Research, Bowen and Priestley Scholarships, and for Bunce Prize and Gladstone Memorial Prize.
2	Tu	
3	W	Meeting of the Council.
4	Th	
5	F	
6	S	
7	S	<i>WHITSUN DAY</i>
8	M	Bank Holiday.
9	Tu	2nd Year Arts, B.A., B.Sc., 2nd, 3rd & 4th Engineering, 2nd & 3rd Mining & Metallurgy, 2nd & 3rd Commerce, Education Diploma, and Exams. in School of Modern Languages commence.
10	W	Meeting of the Faculty of Arts.
11	Th	Meeting of the Faculty of Science.
12	F	
13	S	
14	S	
15	M	Inter-Sci., 1st Engineering, 1st Mining and Metallurgy, Inter-Arts, 1st Commerce, M.A., 1st Medical, 1st L.D.S., and Entrance Exam. to School of Modern Languages commence.
16	Tu	Last day for entry for Matriculation Examination.
17	W	Meeting of the Senate.
18	Th	Third Medical Examination.
19	F	
20	S	
21	S	
22	M	2nd, 4th, and Final M.B., Ch.B., B.D.S., M.D., Ch.M., D.P.H., and B.Sc. in Public Health, and Brewing Diploma Exams. commence.
23	Tu	
24	W	<i>MIDSUMMER DAY.</i>
25	Th	
26	F	
27	S	
28	S	
29	M	
30	Tu	

## JULY—1908.

1	W	Meeting of the Council.
2	Th	
3	F	
4	S	SUMMER TERM ENDS.
5	§	
6	M	
7	Tu	
8	W	
9	Th	
10	F	
11	S	Degree Congregation.
12	§	
13	M	Matriculation Examination commences.
14	Tu	
15	W	
16	Th	
17	F	
18	S	
19	§	
20	M	
21	Tu	
22	W	
23	Th	
24	F	
25	S	
26	§	
27	M	
28	Tu	
29	W	
30	Th	
31	F	

## AUGUST—1908.

1	S	The Library is closed during the whole of August.
2	S	
3	M	Bank Holiday.
4	Tu	
5	W	
6	Th	
7	F	Last day for entry for Supplementary Examinations.
8	S	
9	S	
10	M	Last day for entry for Matriculation Examination.
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	S	
17	M	
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	S	
24	M	
25	Tu	
26	W	
27	Th	
28	F	
29	S	
30	S	
31	M	

## SEPTEMBER—1908.

1	Tu	
2	W	
3	Th	
4	F	
5	S	
6	ſ	
7	M	
8	Tu	
9	W	
10	Th	
11	F	
12	S	
13	ſ	
14	M	Matriculation and Supplementary Examinations commerce.
15	Tu	
16	W	
17	Th	
18	F	
19	S	
20	ſ	
21	M	
22	Tu	
23	W	
24	Tu.	
25	F	
26	S	
27	ſ	
28	M	
29	Tu	<i>MICHAELMAS DAY.</i>
30	W	



---

UNIVERSITY OF BIRMINGHAM.

---



## UNIVERSITY OF BIRMINGHAM.

---

CHARTER.

**Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith.**

To all to whom these presents shall come, greeting:

**Whereas** Petitions have been presented to Us by the Mason University College of Birmingham by the Mayor Aldermen and Citizens of the City of Birmingham in the County of Warwick by the School Board for the said City by the Governors of the Grammar School of King Edward VI in the said City and by others praying Us to erect within the said City for the promotion of Arts Sciences and Learning a University and to grant a Charter with such appropriate provisions therein in that behalf as shall seem to Us meet and fit.

And whereas We have taken the said Petitions into Our Royal consideration and are minded to accede thereto.

Now therefore Know Ye that We by Virtue of Our Royal Prerogative in that behalf and all other powers enabling Us so to do of Our special grace certain knowledge and mere motion by these Presents do for Us Our Heirs and Successors grant will direct and ordain as follows:—

1.—There shall be from henceforth for ever in Our said City of Birmingham a University by the name and style of "The University of Birmingham" with Faculties of Science Arts Medicine and Commerce and such other Faculties as the Statutes of the University may from time to time prescribe.

2.—Our trusty and well-beloved Councillor Joseph Chamberlain the persons named in the Schedule hereto as members of the Court of Governors and of the Council and the Members for the time being of the Court of Governors the Council and the Senate of the University the Chancellor the Pro-Chancellor the Vice-Chancellor the Pro-Vice-Chancellor and the Principal

and Vice-Principal of the University for the time being and all others who shall pursuant to this Our Charter and the Statutes of the University for the time being be Members of the University are hereby created and from henceforth for ever shall be one body politic and corporate with perpetual succession and a Common Seal by the name and style of "The University of Birmingham" with full power and capacity by and in such name to sue and be sued and to take and hold land and to do all other lawful acts whatsoever and with full right authority power and capacity without any further or other licence by virtue of this Our Charter to take and hold such lands tenements and hereditaments as may be for the time being occupied by or on behalf of the said Corporation for the transaction of its business and the actual carrying out of its purposes and also in addition other lands tenements and hereditaments to the annual value of £50,000 according to the annual value thereof at the respective times when the same shall be respectively taken.

3.—We Our Heirs and Successors Kings and Queens of the Kingdom aforesaid shall be and remain the Visitor and Visitors of the University of Birmingham through the Lord President of Our Council for the time being.

4.—There shall be a Chancellor of the said University and one Pro-Chancellor who subject to the Statutes of the University shall act for the Chancellor pending a vacancy in that office or during the absence or inability of the Chancellor.

The first Chancellor shall be Our said trusty and well-beloved Councillor Joseph Chamberlain.

The Vice-Chancellor for the time being shall be Pro-Chancellor.

5.—There shall be a Vice-Chancellor of the said University and one Pro-Vice-Chancellor who subject to the Statutes of the University shall act for the Vice-Chancellor pending a vacancy in that Office or during the absence or inability of the Vice-Chancellor.

6.—There shall be a Principal of the University and one Vice-Principal who subject to the Statutes of the University shall act for the Principal pending a vacancy in that office or during the absence or inability of the Principal.

There shall also be a Dean of each of the Faculties within the University. The Dean of the Faculty of Medicine shall be appointed by the Council from among the Members of that Faculty. The Deans of the other Faculties shall be appointed as provided by the Statutes of the University.

The Principal shall be from time to time appointed by Us Our Heirs and Successors through the Lord President of Our Council for the time being.

The first Vice-Principal shall be Robert Samuel Heath, M.A., D.Sc., now Principal of Mason University College.

The first Dean of the Faculty of Medicine shall be Bertram Coghill Alan Windle, M.A., M.D., D.Sc., F.R.S.

7.—The Supreme Governing Body of the University shall be the Court of Governors and subject to this Charter the Statutes of the University and the Law of the Realm the Court of Governors shall have absolute power within the University.

The first Members of the Court of Governors shall be the persons nominated in the First Schedule to these presents.

Statutes of the University shall regulate the powers and business of the Court the election and continuance in office of the Members of the Court (including the continuance in office of the first Members) the filling of vacancies among the Members and all other matters relative to the Court which it may be thought are proper to be so regulated. Women shall be eligible to be Members of the Court of Governors.

The Chancellor shall be ex-officio head of the University and a Member and President of the Court of Governors.

The Pro-Chancellor shall be ex-officio a member of the Court of Governors.

8.—There shall be a Council of the University which shall subject to the Statutes of the University and the control of the Court of Governors as regulated by the said Statutes have the government and control of the finances of the University and of the discipline practical affairs business and work of the University.

The Vice-Chancellor shall be ex-officio a member and President of the Council.

The Pro-Vice-Chancellor shall be ex-officio a member of the Council.

The Principal Vice-Chancellor and the Deans of the Faculties shall be ex-officio members of the Council.

There shall also be one Member of the Council who shall be elected by the Faculty of Medicine of the University.

At no time shall the Members of the Council who are members of the Senate be more in number than the number of Members of the Council divided by four.

The first Members of the Council shall be the persons nominated in the First Schedule to these presents.

Statutes of the University shall regulate the performance of the duties of the Council the election and continuance in office of the Members of the Council (including the continuance in office of the first Members) the filling of vacancies among the Members and all other matters relative to the Council which it may be thought are proper to be so regulated.

9.—There shall be a Senate of the University consisting of the Principal Vice-Principal Deans of Faculties and all the Professors of the University which shall subject to Statutes of the University and the control and approval of the Council have the regulation and control of the Curriculum and Education afforded by the University and the Discipline of the Students of the University.

The Principal shall be Ex-officio President of the Senate.

Statutes of the University shall regulate and define the powers and business of the Senate and all other matters relative to the Senate which it may be thought are proper to be so regulated.

10.—The University shall be both a Teaching and an Examining University and shall further the prosecution of original research in all its branches.

The University may confer on persons of either sex Degrees Diplomas and Certificates whether Honorary Substantive or otherwise and such Degrees Diplomas and Certificates shall be conferred and held subject to any such provisions as may be made by the Statutes and Ordinances of the University with reference thereto.

No religious test of any kind whatsoever shall be applied in the University or imposed upon or observed by any Member Graduate Student or Office Holder of the University.

11.—The University may admit to affiliation with it or to any of its privileges any College or Institution or the Members or Students thereof upon such terms and conditions and subject to such regulations as may from time to time be prescribed by the Statutes of the University.

12.—The Court of Governors may from time to time make Statutes for the University which shall carry into effect this Charter and its provisions and may regulate and govern and contain prescriptions in regard to the affairs business work and interests of the University and those of the Corporate Members thereof as such and the status appointment and removal of the Members Chancellor Pro-Chancellor Vice-Chancellor Pro-Vice-Chancellor Principal Vice-Principal and Dean of the Faculty of Medicine and Officers thereof and may contain all such provisions as the Court may deem it fit and meet should be made with respect to or for the governing of the University its Constituent parts and Members or to promote the objects of these presents.

The Council shall have such power to suggest draft or propose to the Court Statutes to be made by the Court as the Statutes of the University may provide for and it shall be the duty of the Court to duly consider the same.

The first Statutes of the University shall be those Scheduled to these presents and they are hereby declared to be valid and within the powers by this Article of these presents conferred.

The Statutes may add to amend alter or repeal the Statutes from time to time in force (including the first) and the power to make Statutes shall not be limited by or with reference to the first or any subsequent Statutes or the several subject matters therein dealt with.

Any Statutes to be hereafter made which are not repugnant to the provisions of this Charter or the Laws of the Realm shall be operative and have effect when allowed by Us or by any Committee of Our Most Honourable Privy Council and not before. Such allowance shall be conclusive evidence of the Statutes so allowed being authorised by the provisions of this Charter.

13.—The Court of Governors the Council and the Senate respectively may from time to time make regulations for Governing subject to these presents and the Statutes of the University the proceedings of those bodies respectively. The power to make regulations shall include the power to add to amend alter or repeal any theretofore made.

The Council shall make the first regulations for the Court of Governors and the Council. The regulations for the Court of Governors require the approval of the said Court.

14.—It shall be the duty of the Council from time to time to bring before the Court of Governors and the Senate any matters which in its opinion should be dealt with by these bodies respectively.

15.—There shall be a Guild of Graduates of the University and a Guild of its Students each of whom

shall have such and so many Representatives on the Court of Governors as may be provided by the Statutes of the University. The constitution functions privileges and all other matters connected with the said Guilds requiring to be prescribed shall be prescribed as may be provided by the Statutes.

16.—The Court of Governors may at any time alter amend or add to these presents and their provisions by a Special Resolution in that behalf and such alteration amendment or addition shall when allowed by Us Our Heirs or Successors under the sign manual or otherwise as We or They shall deem meet become effectual so that these presents shall thenceforward continue and operate as though they had been originally granted and made as so altered amended or added to as aforesaid. This Article of these presents shall apply to this Charter as altered amended or added to in manner aforesaid. A Special Resolution means a Resolution passed and confirmed in the manner provided by the Statutes of the University.

17.—Our Royal Will and Pleasure is that these presents shall ever be construed benevolently and in every case most favourably to the University of Birmingham and the promotion of the objects of this Our Charter.

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## FIRST SCHEDULE.

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### MEMBERS OF THE COURT OF GOVERNORS.

The following persons shall be the first members of the said Court:—

#### Class (I.) LIFE GOVERNORS.

The Most Honourable the Marquess of Hertford, the Right Honourable the Earl of Dudley, the Right Honourable the Earl of Harrowby, the Right Honourable the Earl of Warwick, the Right Honourable the Earl of Bradford, the Right Honourable the Earl of Dartmouth, the Right Honourable the Earl of Denbigh,

the Right Honourable the Viscount Cobham, the Right Rev. John Percival (Lord Bishop of Hereford), the Right Honourable Lord Burton, the Right Honourable Lord Calthorpe, the Right Honourable Lord Leigh, the Right Honourable Lord Norton, the Right Honourable Lord Windsor, the Right Honourable Lord Wrottesley, the Right Honourable Joseph Chamberlain, the Right Honourable Sir Henry Hartley Fowler, the Right Honourable William Kenrick, Sir Henry Wiggin, Baronet, Sir John Jaffray, Baronet, Sir Benjamin Hingley, Baronet, Sir John Charles Holder, Baronet, Sir Balthazar Walter Foster, Sir Alfred Hickman, Sir John Benjamin Stone, Sir Richard Tangye, Sir Willoughby Francis Wade, James Gibbs Blake, George James Johnson, Francis Corder Clayton, George Hamilton Kenrick, Robert Francis Martineau, Edward Lawley Parker, Osmund Airy, William Ansell, Edward Ansell, William Beilby Avery, Arthur Albright, George Stacey Albright, William Arthur Albright, William Elijah Benton, Charles Gabriel Beale, Alice Beale, George Edward Belliss, Thomas Barnsley, Francis Seddon Bolton, James Booth, George Cadbury, Elsie Mary Cadbury, Helen Caddick, Andrew Carnegie, Arthur Chamberlain, Joseph Austen Chamberlain, Alexander Macomb Chance, John Homer Chance, Joseph Bennett Clarke, Gilbert Henry Claughton, William Barwick Cregoe-Colmore, William Thomas Gustavus Cook, John Corbett, Frederick Corbett, Harriet Elizabeth Gertrude Dale, Arthur Stansfeld Dixon, Charles Woolryche Dixon, James Ernest Dixon, Frederick Elkington, Thomas Stratton Fallows, John Feeney, Walter Newton Fisher, William Gibbins, Caroline Gibbins, Thomas Gladstone, Arthur Godlee, William Henry Greenwood, Felix Hadley, Charles Harding, Edith Harrold, Obed Charles Hawkes, Alfred Bradley Holinsworth, Charles Bradley Holinsworth, James Richardson Holliday, John Bernard Hardman, William Harris, Robert Heath, George Hookham, Laurence William Hodson, Walter Loveridge Hodgkinson, Charles Holcroft, William Holcroft, Thomas

Vincent Jackson, Frank James, Joseph James, George Hope Johnstone, William Jones, John Arthur Kenrick, Mary Kenrick, Arthur Keen, Rachel Anna King, Ethel Mary Knox, Thomas Grosvenor Lee, Henry Lea, George Braithwaite Lloyd, John Henry Lloyd, John Pearce Lacy, John Walford Lea, Edward Bindon Marten, Frank McClean, Alfred Morcom, Henry Mitchell, John Manley, Charles Edward Mathews, John Throgmorton Middlemore, George Henry Morley, Edward Nettlefold, Abraham Follett Osler, Alfred Clarkson Osler, Henry Follett Osler, Thomas Parker, Ebenezer Parkes, Charles Andrew Palmer, Richard Peyton, John Phillips, Richard Alfred Pinsent, Hume Chancellor Pinsent, Maurice Pollack, Alfred Henry Poultney, Edwin Rickards, Charles Showell, Howard Samuel Smith, Martyn Josiah Smith, Edward James Smith, William Charles Alston Smith-Ryland, Alexander William Still, Lilian Landon Thomas, Thomas William Thursfield, William Augustus Tilden, George Tangye, Michael Tomkinson, Thomas Turner, Isabel Mary Vardy, John Clough Vaudrey, Thomas Ferdinand Walker, John William Bund Willis-Bund, John Edward Wilson, Joseph Henry Wilkinson, Georgina Tarleton Young, Hugo Joseph Young.

**Class (2) Five persons appointed by the Municipal Council of the City of Birmingham.**

Sir JAMES SMITH.  
MAURICE POLLACK.  
WILLIAM THOMAS GUSTAVUS COOK.  
JOHN HENRY LLOYD.  
ALFRED JOHN REYNOLDS.

**Class (3) One member for each of the County Councils of Warwickshire Worcestershire Staffordshire Shropshire Leicestershire Derbyshire Rutlandshire to be appointed by the respective County Councils and one member for the Council of every County Borough (other than the City of Birmingham) in the said Counties and for the Council of the Borough of Kidderminster to be appointed by the respective**

Councils and one member for the School Board of every School Board for a County Borough (other than Birmingham) in the said Counties.

	<i>Appointed by</i>
THE REV. WILLIAM MACGREGOR ...	The County Council of Warwickshire.
GEORGE WILLIAM GROSVENOR ...	The County Council of Worcestershire.
FRANCIS ELLIOTT KITCHENER ...	The County Council of Staffordshire.
JAMES PATCHETT ... ...	The County Council of Shropshire.
BENJAMIN HURST ... ...	The County Council of Leicestershire.
GEORGE HERBERT STRUTT ...	The County Council of Derbyshire.
THE RIGHT HON. THE EARL OF GAINSBOROUGH ... ...	The County Council of Rutlandshire.
ALBERT SAMUEL THOMSON ...	The Council of the City of Coventry.
ALBERT BUCK ... ...	The Council of the City of Worcester.
CHARLES HAYNES ... ...	The Council of the Borough of Dudley.
EDWARD THOMAS HOLDEN ...	The Council of the Borough of Walsall.
CHARLES AKRILL ... ...	The Council of the Borough of West Bromwich.
THOMAS HAMPTON ... ...	The Council of the Borough of Hanley.
SAMUEL THEODORE MANDER ...	The Council of the Borough of Wolverhampton.
EDWARD WOOD ... ...	The Council of the Borough of Leicester.
JOHN EYRE RUSSELL ... ...	The Council of the Borough of Derby.
EDWARD PARRY ... ...	The Council of the Borough of Kidderminster.
FREDERICK BIRD ... ...	The School Board of the City of Coventry.
ALBERT WEBB ... ...	The School Board of the City of Worcester.

	<i>Appointed by</i>
GEORGE HENRY DUNN ...	The School Board o the Borough of Dudley.
The Rev. GEORGE BARRANS ...	The School Board of the Borough of Walsall.
The Rev. JOHN WATKISS JONES ...	The School Board of the Borough of West Bromwich.
THOMAS WILLIAM HARRISON ...	The School Board of the Borough of Hanley.
ALEXANDER HUNTER ... ...	The School Board of the Borough of Wolverhampton.
ALEXANDER BAINES ... ...	The School Board of the Borough of Leicester.
WILLIAM BEMROSE ... ...	The School Board of the Borough of Derby.

Class (4) One person appointed by the Birmingham School Board.

The Rev. JOSEPH WOOD.

Class (5) One person appointed by the Lord President of Her Majesty's Privy Council.

WILLIAM AUGUSTUS TILDEN.

One each by the Chancellors for the time being of the Universities of Oxford Cambridge London Wales the Victoria University and the University of Birmingham.

	<i>Appointed by</i>
EDWARD BAGNALL POULTON ...	The Chancellor of the University of Oxford.
WILLIAM NAPIER SHAW ...	The Chancellor of the University of Cambridge.
JOSEPH LARMOR ... ...	The Chancellor of the University of London.
The Right Hon. LORD RENDEL ..	The Chancellor of the University of Wales.
NATHAN BODINGTON ...	The Chancellor of the Victoria University.
(To be appointed) ...	The Chancellor of the University of Birmingham.

One by the Warden of Durham University.

FRANK BYRON JEVONS.

One by the Royal College of Physicians of London.

CHARLES THEODORE WILLIAMS.

One by the Council of the Royal College of Surgeons of England.

Sir WILLIAM MACCORMACK, Baronet.

Class (6) Ten of the Members of Parliament elected for the Boroughs Counties and Divisions of Counties or Boroughs in the said seven Counties.

The Right Hon JESSE COLLINGS, M. P.

VICTOR MILWARD, M.P.

RICHARD BIDDULPH MARTIN, M.P.

JOHN WILLIAM WILSON, M.P.

WILLIAM WOODALL, M.P.

Sir HENRY HOWE BEMROSE, M.P.

VICTOR C. W. CAVENDISH, M.P.

ALEXANDER HARGREAVES BROWN, M.P.

Lord EDWARD MANNERS, M.P.

ALFRED BALDWIN, M.P.

Class (7) Governors ex-officio.

The Lord Mayor of Birmingham (CHARLES GABRIEL BEALE).

The Right Rev. JOHN JAMES STEWART PEROWNE, D.D., Lord Bishop of Worcester.

The Right Rev. The Hon. AUGUSTUS LEGGE, D.D., Lord Bishop of Lichfield.

The Right Rev. EDWARD ARBUTHNOT KNOX, D.D., Suffragan-Bishop of Coventry.

The Right Rev. EDWARD ILSLEY, D.D., Roman Catholic Bishop of Birmingham.

The Chairman of the Guardians of the Poor of the Parish of Birmingham.

STEPHEN GATELEY.

The Chairman of the Birmingham School Board.

The Rev. EGERTON FRANCIS MEAD MACCARTHY.

The Bailiff of the Governors of the Foundation of King Edward VI. Birmingham.

ROBERT SAMUEL HEATH.

The Senior Vice-President of the Birmingham and Midland Institute.

HUMBERT CHANCELLOR PINSENT.

The Head Master of the High School on the Foundation of King Edward VI. Birmingham.

THE REV. ALBERT RICHARD VARDY.

The Head Masters of Rugby Repton Shrewsbury Uppingham and Malvern.

The Rev. HERBERT ARMITAGE JAMES	...	Rugby.
The Rev. WILLIAM MORDAUNT FURNEAUX	...	Repton.
The Rev. H. WHITEHEAD MOSS	...	Shrewsbury
The Rev. EDWARD CARUS SELWYN	...	Uppingham
The Rev. SYDNEY RHODES JAMES	...	Malvern.

The Head Masters of the Grammar Schools on the Foundation of King Edward VI. Birmingham.

THE REV. EGERTON FRANCIS MEAD MACCARTHY.

THE REV. ARTHUR JAMSON SMITH.

ERNEST WILLIAM FLOYD.

The Head Mistress of the High School for Girls on the Foundation of King Edward VI. Birmingham.

EDITH ELIZABETH MARIE CREAK.

The Head Master of the Birmingham Municipal School of Art.

EDWARD RICHARD TAYLOR.

The Principal of the Birmingham Municipal Technical School.

WILLIAM EDWARD SUMPNER.

The President of the Birmingham and Midland Counties Branch of the British Medical Association.

BENNETT MAY.

The President of the Central Counties Branch of the British Dental Association.

JOHN THOMAS CRAIG.

The President of the Birmingham Clinical Board.

THOMAS FREDERICK CHAVASSE.

The President of the Birmingham Law Society.

JOSEPH ANSELL.

The Chairman of the Committee of the General Hospital Birmingham

JOSEPH HICKMAN PEARSON.

The Chairman of the Committee of the Queen's Hospital Birmingham.

HENRY GLAISYER.

The Vice-Principal.

ROBERT SAMUEL HEATH.

The Dean of the Medical Faculty.

BERTRAM COGHILL ALAN WINDLE.

Class (15) One member appointed by each of the following eleven Associations of Voluntary Elementary Schools viz. :—

*Church of England Associations.*

*Diocese of Worcester (comprising the Counties of Worcester and Warwick).*

- (a) The Church Schools Association for the Diocese of Worcester.  
The Right Rev. JOHN JAMES STEWART PEROWNE, D.D.,  
Lord Bishop of Worcester.
- (b) The Church Schools Sub-Association for the Archdeaconry of Worcester.  
The Ven. WILLIAM WALTERS, Archdeacon of Worcester.
- (c) The Church Schools Sub-Association for the Archdeaconry of Coventry.  
The Ven. WILLIAM BREE, D.D., Archdeacon of Coventry.
- (d) The Church Schools Sub-Associations for the Archdeaconry of Birmingham.  
The Right Rev. EDMUND ARBUTHNOT KNOX, D.D.,  
Bishop-Suffragan of Coventry.

*Diocese of Lichfield.*

The Church Schools Associations for the Diocese of Lichfield as under :

- (e) The Staffordshire Voluntary Schools Association and its two divisions.

The Right Rev. the Hon. AUGUSTUS LEGGE, D.D., Lord Bishop of Lichfield.

- (f) The North Staffordshire Sub-Association

The Rev. CHARLES HARE SIMPKINSON.

- (g) The South Staffordshire Sub-Association.

ISAAC EDWARD EVERETT.

- (h) The North Salop Voluntary Schools Association.

The Rev. THOMAS AUDEN.

*Roman Catholic Association.*

- (i) Birmingham Diocesan Catholic Schools Association. (Comprising the Counties of Worcester Warwick Stafford and Oxford.)

JAMES JOHN PARFITT.

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- (j) Midland Association of Wesleyan Day Schools. (Comprising the Counties of Leicester Stafford Warwick Worcester and parts of Cheshire Derby Lincoln (Kesteven) Notts Salop and York (W.R.).

WILLIAM PARKIN.

- (k) The Midland Counties Association of British and other Voluntary Schools. (Comprising the Counties of Derby Leicester Notts Salop Warwick and parts of Staffordshire and Worcestershire.)

ALFRED WILLIAM WORTHINGTON.

#### MEMBERS OF THE COUNCIL.

The following persons shall be the first members of the said Council:—

Class (1)—

The Rt.Hon. JOSEPH CHAMBERLAIN ... Chancellor.

<i>(To be elected)</i>	{	Vice-Chancellor.
		Pro-Vice-Chancellor.
		Treasurer.
		Principal.

ROBERT SAMUEL HEATH ... ... Vice-Principal.

BERTRAM COGHILL ALAN WINDLE ... Dean of the Faculty of Medicine.

## Class (2)—

The Right Hon. LORD WINDSOR.  
 Sir JOHN CHARLES HOLDER, Baronet.  
 JAMES GIBBS BLAKE.  
 FRANCIS CORDER CLAYTON.  
 GEORGE WILLIAM GROSVENOR.  
 GEORGE JAMES JOHNSON.  
 GEORGE HAMILTON KENRICK.  
 FRANCIS ELLIOTT KITCHENER.  
 The Rev. WILLIAM MACGREGOR.  
 SAMUEL THEODORE MANDER.  
 ROBERT FRANCIS MARTINEAU.  
 HUME CHANCELLOR PINSENT.  
 EDWIN RICKARDS.  
 CHARLES SHOWELL.

## Class (3)—

Sir JAMES SMITH.  
 MAURICE POLLACK.  
 WILLIAM THOMAS GUSTAVUS COOK.  
 JOHN HENRY LLOYD.  
 ALFRED JOHN REYNOLDS.

Class (4)—To be appointed.

Class (5)—To be appointed.

## SECOND SCHEDULE.

## STATUTES OF THE UNIVERSITY.

## SECTION I.

## PRELIMINARY.

In these Statutes:—

- “ University ” means the University of Birmingham.
- “ Court ” means the Court of Governors of the University.
- “ Council ” means the Council of the University.
- “ Senate ” means the Senate of the University.
- “ Faculty ” means a Faculty of the University.

“ Chancellor ” “ Pro-Chancellor ” “ Vice-Chancellor ” “ Pro-Vice-Chancellor ” “ Principal ” “ Vice-Principal ” and “ Deans of the Faculties ” mean respectively the Chancellor Pro-Chancellor Vice-Chancellor Pro-Vice-Chancellor Principal Vice-Principal and Deans of the Faculties of the University.

“ Statutes ” means the Statutes of the University.  
“ Ordinance ” means Ordinance made pursuant to the Statutes.

“ Regulation ” means Regulation made pursuant to the Charter or Statutes.

“ Graduate ” means Graduate of the University.

“ Under-graduate ” means Under-graduate Student of the University.

“ Professor ” means Professor appointed to be such in the University.

“ Treasurer ” means Treasurer of the University.

“ Secretary ” means Secretary of the University.

“ Registrar ” means Registrar of the University.

“ Financial year ” means the yearly period for which the accounts and financial affairs of the University are for the time being made up arranged and calculated.

“ Auditor ” means Auditor of the University Accounts.

“ Good cause ” when used in reference to removal from office membership or place means (1) misbehaviour in office (2) being a lunatic (3) conviction of any felony (4) conviction of any misdemeanour which shall be judged by the authority invested with the power of removal to be of an immoral scandalous or disgraceful nature (5) actual incapacity in or for the execution of the duties of the office membership or place or (6) any misbehaviour of an immoral scandalous or disgraceful nature rendering the holder of the office membership or place unfit in the opinion of the authority invested with the power of removal to continue such holder.

## SECTION 2.

### THE CHANCELLOR.

1.—The Chancellor shall be elected by the Court but his election must to be effective be approved by the Crown.

2.—The Chancellor shall hold office during good behaviour.

3.—The Chancellor may be removed for good cause by the Visitor at the instance of the Court.

4.—The Chancellor may resign by writing addressed to the Court and signed by him.

5.—The above provisions so far as applicable apply to the First Chancellor.

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## SECTION 3.

### THE VICE-CHANCELLOR AND PRO-VICE-CHANCELLOR.

1.—The Vice-Chancellor and Pro-Vice-Chancellor shall be elected by the Court but if the Chancellor shall object to the election of any person and show cause for his objection to the Visitor the Visitor may in his discretion annul the election.

2.—The said Officers shall hold office during good behaviour.

3.—Either of the said Officers may be removed for good cause by the Visitor at the instance of the Court.

4.—The said Officers may respectively resign by writing signed by them addressed to the Chancellor.

5.—The above provisions so far as applicable shall apply to the First Vice-Chancellor and Pro-Vice-Chancellor.

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## SECTION 4.

### PRINCIPAL.

1.—The Principal shall be appointed by the Crown.

2.—The Principal shall hold office during good behaviour.

3.—The Principal may be removed for good cause by the Visitor at the instance of the Court.

4.—The Principal may resign by writing addressed to the Court and signed by him.

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## SECTION 5.

### VICE-PRINCIPAL AND DEAN OF THE FACULTY OF MEDICINE.

1.—The Vice-Principal and Dean of the Faculty of Medicine shall be appointed by the Council.

2.—The Vice-Principal and the said Dean shall hold office during good behaviour.

3.—The said Officers may be removed by the Council for good cause provided that such removal shall only be carried by a Resolution of the Council passed at a meeting at which not less than an absolute majority of the whole Council are present and vote and carried at such meeting by the vote of two-thirds of those present.

4.—The said Officers may respectively resign their offices by writing signed by them and addressed to the Vice-Chancellor.

5.—The above provisions so far as applicable shall apply to the First Vice-Principal and Dean of the Faculty of Medicine.

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## SECTION 6.

### THE TREASURER.

1.—The Treasurer shall be appointed by the Court and shall be ex-officio a member of the Court.

2.—The Treasurer's term of office shall be five years from appointment and subject thereto during good behaviour.

3.—The Treasurer shall furnish such security as the Council think fit to require but it shall not be obligatory on the Council to demand security from the Treasurer.

4.—The Treasurer shall be removable from office for good cause by the Council.

5.—The Treasurer may resign by writing under his hand addressed to the Vice-Chancellor.

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### SECTION 7.

#### THE SECRETARY.

The Council shall from time to time appoint a Secretary of the University for such term and at such remuneration as it shall deem fit who may be suspended or dismissed by the Council in its discretion.

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### SECTION 8.

#### THE REGISTRAR.

The Council shall from time to time appoint a Registrar of the University for such term and at such remuneration as it shall deem fit who may be suspended or dismissed by the Council in its discretion.

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### SECTION 9.

#### AUDITOR.

1.—The Court shall from time to time appoint an Auditor who shall not nor shall any member of his firm be a member of any of the University Governing Bodies but shall be a member of the Institute of Chartered Accountants of England and Wales in the active practice of his profession.

2.—The Auditor's term of office shall be three years subject to good behaviour.

3.—The Auditor may be removed for good cause by the Court.

4.—The Auditor shall receive such remuneration as may be agreed to by the Council.

5.—The Auditor shall give such certificates as the Regulations prescribe.

6.—The Auditor may resign in writing addressed to the Council.

7.—Acceptance of office by an Auditor shall be deemed to carry with it an undertaking by the Auditor to the University that every certificate given by him or passing of accounts by him implies that he satisfied himself by full and careful investigation (made by himself or agents for whom he undertakes to be responsible) by every reasonable means within his power or reach and after the exercise of due professional skill that the statements in the certificate are true and accurate and that any accounts certified or passed are complete true and accurate.

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## SECTION 10.

### MEMBERS OF THE UNIVERSITY.

The following persons shall be Members of the University:—

#### Class A—

Members of the Court.

Members of the Council.

Members of the Senate.

#### Class B—

The officers of the University hereinbefore mentioned other than the Auditor.

#### Class C—

Such Members of the Teaching Staff of the University as shall under Ordinances or Regulations made by the Council enjoy the status of members.

#### Class D—Graduates.

#### Class E—Undergraduates.

Membership of the University shall continue so long

only as the qualifications above enumerated continue to be possessed by the individual member and expiration of the term of office removal from or resignation of office or withdrawal or resignation of the qualification (as the case may be) shall terminate the individual's membership of the University.

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### SECTION II.

#### THE COURT.

1.—The following shall be Members of the Court:—

Class (1) The Life Governors who are nominated in the First Schedule to these Presents and their successors.

Class (2) Five persons to be appointed by the Municipal Council of the City of Birmingham.

Class (3) One member for each of the County Councils of Warwickshire Worcestershire Staffordshire Shropshire Leicestershire Derbyshire Rutlandshire to be appointed by the respective County Councils and one member for the Council of every County Borough (other than the City of Birmingham) in the said Counties and for the Council of the Borough of Kidderminster to be appointed by the respective Councils and one member for the School Board of every School Board for a County Borough (other than Birmingham) in the said Counties and one member for such other Counties Municipal Boroughs or School Boards as the Court by resolution prescribe.

Class (4) One person to be appointed by the Birmingham School Board.

Class (5) Persons appointed as follows:—

One by the Lord President for the time being of Her Majesty's Privy Council.

One each by the Chancellors for the time being of the Universities of Oxford Cambridge London Wales the Victoria University and the University of Birmingham.

One by the Warden of Durham University.  
One by the Royal College of Physicians of London.  
One by the Council of the Royal College of  
Surgeons of England.

Class (6) Ten of the Members of Parliament elected  
for the Boroughs Counties and Divisions of  
Counties or Boroughs in the said seven Counties to  
be nominated by the Court.

Class (7) The following officials shall be members of  
the Court ex-officio—

The Lord Mayor of Birmingham.

The Lords Bishops of Worcester and Lichfield the  
Bishop of Coventry and the Roman Catholic  
Bishop of Birmingham.

The Chairman of the Guardians of the Poor of the  
Parish of Birmingham.

The Chairman of the Birmingham School Board.

The Bailiff of the Governors of the Foundation of  
King Edward VI. Birmingham.

The Senior Vice-President of the Birmingham and  
Midland Institute.

The Head Master of the High School on the  
Foundation of King Edward VI. Birmingham.

The Head Masters of Rugby Repton Shrewsbury  
Uppingham and Malvern.

The Head Masters of the Grammar Schools on the  
Foundation of King Edward VI. Birmingham.

The Head Mistress of the High School for Girls  
on the Foundation of King Edward VI. Bir-  
mingham.

The Head Master of the Birmingham Municipal  
School of Art.

The Principal of the Birmingham Municipal  
Technical School.

The President of the Birmingham and Midland  
Counties Branch of the British Medical Associa-  
tion.

The President of the Central Counties Branch of  
the British Dental Association.

The President of the Birmingham Clinical Board.

The President of the Birmingham Law Society.  
The Chairman of the Committee of the General Hospital Birmingham.  
The Chairman of the Committee of the Queen's Hospital Birmingham.  
The Principal and Vice-Principal.  
The Deans of the Faculties.  
The Professors of the University.  
The Honorary Secretary of the Dental Department of the University.

Class (8) Six persons elected by the Guild of Graduates.

Class (9) Three persons elected by the Guild of Undergraduates.

Class (10) Every donor to the funds of the University to the amount or value of £1,000 or upwards whether by one or more donations or by instalments shall be a member for life.

Class (11) Every such donor as in Class (10) referred to making the donation by testament shall be entitled to appoint by testament or by will to authorise his personal representatives on one occasion to appoint some person to be a life member.

Class (12) Any Corporation Local Authority Company Association or Partnership making such a donation as in Class (10) mentioned shall be entitled on one occasion to appoint one person to be a life member.

Class (13) Such representatives of affiliated colleges as may be appointed under Section 20 of these Statutes.

Class (14) Such other persons not exceeding 20 in number as may be elected by the Court who shall be members for such periods as the Court at the time of election appoints.

Class (15) One member to be appointed by each of the following eleven Associations of Voluntary Elementary Schools, viz. :—

*Church of England Associations.*

*Diocese of Worcester (comprising the Counties of Worcester and Warwick).*

- (a) The Church Schools Association for the Diocese of Worcester.
- (b) The Church Schools Sub-Association for the Archdeaconry of Worcester.
- (c) The Church Schools Sub-Association for the Archdeaconry of Coventry.
- (d) The Church Schools Sub-Associations for the Archdeaconry of Birmingham.

*Diocese of Lichfield.*

The Church Schools Associations for the Diocese of Lichfield as under—

- (e) The Staffordshire Voluntary Schools Association and its two divisions.
- (f) The North Staffordshire Sub-Association.
- (g) The South Staffordshire Sub-Association.
- (h) The North Salop Voluntary Schools Association.

*Roman Catholic Association.*

- (i) Birmingham Diocesan Catholic Schools Association. (Comprising the Counties of Worcester Warwick Stafford and Oxford.)

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- (j) Midland Association of Wesleyan Day Schools. (Comprising the Counties of Leicester Stafford Warwick Worcester and parts of Cheshire Derby Lincoln (Kesteven) Notts Salop and York (W.R.)
- (k) The Midland Counties Association of British and other Voluntary Schools. (Comprising the Counties of Derby Leicester Notts Salop Warwick and parts of Staffordshire and Worcestershire.)

2.—Any vacancy occurring in the number of Life Governors in Class (1) may be filled up by the election by the Court of Governors of some fit person to be a Life Governor of the University.

3.—All casual vacancies shall be filled up as soon as conveniently possible by the person or body which appointed the member whose place has become vacant and the appointee to a casual vacancy shall be a member for the residue of the term for which the person in whose place he is appointed was member.

4.—The members in Class (2) shall hold office for five years and one is to vacate office in every year on the 1st day of December. The first vacation to be in the year 1901. The Municipal Council shall as soon as may be after the date of these presents determine the order in which their first appointees shall retire and vacancies by retirement shall be filled at such times and in such manner as the said Council directs.

5.—The members in each of Classes (3) (4) (5) (8) (9) (13) and (15) shall hold office for three years dating from January 1st in every year and vacancies by retirement shall be filled at such time and in such manner as the appointors respectively think fit. The first members shall act as such as from the date of these presents but shall reckon their term of office as from January 1st 1900.

6.—The members in Class (6) shall continue members so long as they continue Members of Parliament and no longer. Vacancies shall be filled as they occur and as soon thereafter as conveniently may be.

7.—Members retiring by effluxion of time may be re-elected.

8.—Members (other than ex-officio members) may be removed for good cause by the Court.

9.—Members need not be members of the bodies by which they are appointed.

10.—Women may be members of the Court.

11.—Where members of the Court comprised within

any of the classes aforesaid have not been nominated in the First Schedule to the Charter such members shall be appointed in accordance with this section as soon as may be after the date of the Charter.

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## SECTION 12.

### THE COUNCIL.

1.—The Council shall consist of the following members, viz. :—

Class (1) The Chancellor the Vice-Chancellor Pro-Vice-Chancellor Treasurer Principal Vice-Principal and Dean of the Faculty of Medicine.

Class (2) At least twelve members of the Court appointed by the Court.

Class (3) The five persons appointed by the Birmingham City Council to be members of the Court.

Class (4) The Deans of the Faculties other than the Faculty of Medicine.

Class (5) A representative of the Faculty of Medicine elected by the members of that Faculty.

2.—Class (2) shall hold office for four years and Classes (4) and (5) for three years. The term shall in the case of the first appointment be reckoned as from the date of the Charter and in case of any subsequent appointment from the date of such appointment or re-appointment as the case may be.

3.—Of Class (2) one-fourth or the number nearest to one-fourth shall retire every year. The Court shall determine the order in which the first members of Class (2) shall retire. Every retiring member of this class shall continue to act until his successor is appointed.

4.—All casual vacancies shall be filled up as soon as conveniently may be by the body which appointed the member whose place has become vacant and the appointee to a casual vacancy shall be a member for the

residue of the term for which the person in whose place he is a member was appointed.

5.—Except as expressly above provided appointees need not be members of the body by which they are appointed.

6.—Members retiring by effluxion of time may be re-elected.

7.—Members (other than ex-officio members) may be removed for good cause by the Court.

8.—In case any member of the Council comprised within any of the above classes has not been nominated in the First Schedule to the Charter he shall be appointed in accordance with this Section as soon as possible.

9.—Class (2) aforesaid shall be increased by three members for every member of the Senate also member of the Council who brings up the number of members of the Senate who are members of Council to a number exceeding the proportion provided by the Charter. Such additional members shall be elected as soon as possible after the cause of election arises.

### SECTION 13.

#### THE SENATE.

1.—The Senate shall consist of the Principal Vice-Principal the Deans of all the Faculties and all the Professors of the University for the time being.

### SECTION 14.

#### ORDINANCES.

1.—The Council shall make Ordinances with regard to such matters as are directed by the Statutes.

2.—Ordinances shall be effective and binding when sanctioned by the Court except that in cases certified to be urgent by a vote to that effect of not less than an absolute majority of the Council Temporary Ordinances may be made and shall be operative from a date

prescribed by the Council until the then next meeting of the Court at which the Ordinance can be considered.

3.—Ordinances shall subject to the Charter and Statutes deal with the following matters :—

- (a) The finances investments and accounts of the University.
- (b) The constitution functions and privileges of the Guilds of Graduates and Under-Graduates and other matters connected with the said Guilds requiring to be prescribed.
- (c) The Degrees Diplomas Certificates and distinctions (honorary and substantive) to be awarded by the University the qualifications for the same inclusive of examinations and the means and steps to be taken relative to the granting and obtaining of the same.
- (d) Prescriptions regarding the discipline to be enforced in regard to the Graduates and Under-Graduates.
- (e) The withdrawal of Degrees Diplomas Certificates and Distinctions.
- (f) The removal from Membership of the University of Graduates and Under-Graduates.
- (g) Such subjects as are required by the Statutes to be prescribed by means of Ordinances.
- (h) The inspection and examination of Schools and other Institutions and the Scholars and Students therein and the grant of Certificates of Proficiency.
- (i) The provisions and tenure of such Fellowships Scholarships Exhibitions prizes rewards and pecuniary and other aids as are referred to in Section 16 of the Statutes.
- (k) The payment and amount of fees to be exacted within the University or in relation to the enjoyment of privileges therefrom.

- (l) The emoluments allowances salaries and superannuation allowances of the Officers of the University its Professors Lecturers Teaching Staff Secretary Registrar and permanent servants.
  - (m) The provision employment tenure of office and terms and manner of appointment and the duties of and teaching by Professors Lecturers and Teaching Staff.
  - (n) The conditions of affiliation of Colleges.
  - (o) The provision maintenance and supervision of Halls or other premises for the residence of students.
  - (p) The duties and powers of Faculties and Advisory Boards.
  - (q) The tenure of office and terms and manner of appointment and the duties of the Examiners Examining Boards Secretary Registrar Librarian and permanent servants.
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### SECTION 15. FACULTIES.

1.—There shall be within the University the Faculties following :—

- (1) Science.
- (2) Arts.
- (3) Medicine.
- (4) Commerce.
- (5) Such others as may be added by Statute.

2.—Ordinances shall prescribe which professors and teachers shall be members of or be attached to the several Faculties. The Principal and Vice-Principal shall be members of all Faculties. Ordinances shall also provide for the subjects which are to be within the cognizance of the respective Faculties.

3.—In the Faculties other than that of Medicine the respective Deans shall be appointed by the Members of the Faculty and shall hold office for three years.

4.—In each Faculty the Dean shall preside over the Meetings of his Faculty.

5.—The Deans other than the Dean of the Faculty of Medicine shall be removable for good cause by the Faculty appointing them respectively with the sanction of the Council.

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## SECTION 16.

### TEACHING.

The University shall so far as and to the full extent which its resources from time to time permit provide for :—

- (a) Instruction and teaching in every Faculty.
- (b) Such instruction in all branches of liberal education as may enable students to become proficient in and qualify for degrees diplomas and certificates in science commerce arts literature law medicine surgery and all other branches of knowledge.
- (c) Such instruction especially whether theoretical technical artistic or otherwise as may be of service to persons engaged or about to engage in the manufactures commerce and industrial pursuits of the Midland Districts of England.
- (d) Facilities for the prosecution of original research in science literature arts medicine surgery law and especially the applications of science.
- (e) Such fellowships scholarships exhibitions prizes and rewards and pecuniary and other aids as shall facilitate or encourage proficiency in the subjects taught in the University and also original research in every branch.
- (f) Such extra-collegiate and extra-university instruction and teaching as may be sanctioned by ordinances.

## SECTION 17.

## UNIVERSITY EXAMINATIONS.

1.—Except in the case of subjects not taught in the University the Examiners of the University shall be the Professors of the University with such Lecturers of the University as the Council from time to time appoint and such External Examiners not being Professors Lecturers or Teachers in the University as may be from time to time appointed by the Council. Provided that at least one such External Examiner shall be appointed by the Council for each subject or group of subjects forming part of the courses of studies required for University degrees.

2.—All matters respecting the subjects time and mode of the Examinations, and respecting the degrees and distinctions to be conferred by the University shall be provided for by Ordinance. Provided always that all Examinations of members of the University shall be conducted jointly by External Examiners and by Examiners being Professors or Lecturers of the University.

## SECTION 18.

## COMMITTEES.

1.—The Court Council and Senate may respectively appoint such and so many standing and special Committees as may seem to them fit for the purpose of dealing with any subjects or matters delegated to such Committees. The Committees' power shall be such as the bodies appointing them from time to time direct and may be revoked altered or enlarged as to the appointing bodies shall seem meet. Every Committee shall report to the body appointing it but to the extent to which that body from time to time directs the proceedings and acts of Committees shall not require the approval of the appointing body.

2.—The Council shall make regulations for the proceedings of all Committees but subject thereto every

Committee may regulate its own procedure times and places of meeting.

3.—The Vice-Chancellor shall ex-officio be a member of every Committee of the Court and Council and every joint Committee of the Court and Council.

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## SECTION 19.

### ADVISORY BOARDS.

The Council may from time to time appoint Advisory Boards consisting either wholly or partly of members unconnected with the University upon such terms and for such purposes as the Council may consider advisable and may refer to them for advice and report any subject or matter in the Council's opinion requiring to be so dealt with. And such advice and report shall be duly considered and weighed by any body in the University to which the Council direct such advice to be given or report to be made.

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## SECTION 20.

### AFFILIATION.

1.—The University shall have power to affiliate Colleges which may have attained a standard which shall be deemed satisfactory by the University to require contributions for University purposes from such Colleges as a condition of affiliation or otherwise and to make ordinances for regulating their relations to the University and in particular for regulating the number of the representatives of such Colleges on the University Court.

2.—The University may recognise attendance upon courses of study in an affiliated College as wholly or in part qualifying students for graduation. Provided that the recognition of lecturers teachers and examiners the regulations respecting the period of attendance upon and the character and subjects of such courses and the period of attendance at such College and the period of collegiate study for which exemption is to be granted shall be approved by the Council and

provided also that the Council shall not approve thereof unless the Senate have recommended the same or unless and until the Senate shall have had a reasonable opportunity of considering and reporting thereupon to the Council.

3.—Notwithstanding that a subject is not taught in the University the Court shall have power to recognise a College in which such subject is taught and to recognise such subject as a subject for degrees in the University. Provided that pursuance of a scheme of study in that subject approved by the Council be a condition precedent to examination in that subject.

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## SECTION 21.

### MEETINGS OF THE COURT.

1.—A meeting hereinafter distinguished as the “yearly meeting” of the Court shall be held once a year in the month of January or February at such day and hour as shall be appointed by the Council with the approval of the Chancellor and at such yearly meeting a Report of the Proceedings of the Council and of the University together with a Statement of the Receipts and Expenditure and the Balance Sheet as audited shall be presented by the Council to such meeting.

2.—For the purposes of transacting the business in the preceding clause mentioned a quorum of the Court shall be twenty members.

3.—All other business at the yearly meeting shall be deemed special business and for the purpose of any such special business and also for the purposes of all special general meetings the quorum shall be eighty members.

4.—In the absence of a quorum no business but the adjournment of the Court can be transacted.

5.—Special general meetings may be convened by the Council at any time.

6.—Twenty-one days' notice of the yearly meeting shall be sent by the Secretary to every member of the Court.

7.—Members intending to bring forward any special business at the yearly meeting shall give notice of such business to the Secretary at least fourteen days before the day appointed for such meeting and at least seven days notice of all special business to be brought forward at the yearly meeting shall be sent to every member of the Court.

8.—Twenty-one days' notice of any special general meeting stating generally the nature of the business to be transacted shall be sent to each member of the Court and no meeting shall be competent to transact any other business than that mentioned in the notice or directly arising thereout. Provided always that this clause shall not interfere with the operation of clause 7 of this section.

9.—The procedure at meetings of the Court shall be in accordance with the regulations made for governing the same as provided by the Charter.

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## SECTION 22.

### POWERS OF THE COURT.

1.—The Court shall exercise all the powers and authority of the University except to the extent to which the exercise of the same may by the Charter Statutes and Ordinances be otherwise provided for.

2.—To make Statutes either at its own initiative or on the proposal of the Council.

3.—All Statutes must be passed at one meeting of the Court and confirmed at the next and special notice of the fact that Statutes will be considered and containing a short statement of the nature of the proposed Statutes must have been given with respect to each of the two meetings aforesaid.

4.—A Special Resolution of the Court means a resolution passed at one meeting of the Court and confirmed at a subsequent meeting held not less than one calendar month nor more than three calendar months after the former provided the resolution be passed at each meeting by a majority of not less than two-thirds of those present and voting.

5.—The Court shall exercise control over the Senate through the Council and not otherwise and over the Council by means of Statutes and of Resolutions passed in plenary sittings of the Court and not otherwise.

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### SECTION 23.

#### ACTS DURING VACANCIES.

1.—No act or resolution of the Court the Council or the Senate shall be invalid by reason only of any vacancy in the body doing or passing it or by reason of any want of qualification by or invalidity in the election or appointment of any de facto member of the body (whether present or absent).

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### SECTION 24.

#### POWERS OF THE COUNCIL.

1.—Subject to the Charter and the Statutes and any Ordinances and Regulations made in pursuance thereof the Council shall have the following Powers :—

1. To draft statutes as and when they see fit and submit the same to the Court for consideration and enactment.
2. To make ordinances for any matters in respect of which ordinances are authorised to be made.
3. To make regulations for any purposes for which regulations are authorised to be made.
4. To exercise all such powers as are conferred on the Council by the Charter Statutes Ordinances and Regulations and carry the Charter Statutes Ordinances and Regulations into effect.

- 5.—To review and control or disallow any act of the Senate and give directions to be obeyed by the Senate.
  6. To govern manage and regulate the finances accounts investments property business and all affairs whatsoever of the University.
  7. To make contracts on behalf of the University.
  8. To sell buy exchange lease or take leases of the University's real and leasehold estates.
  9. To provide the buildings premises furniture and apparatus and other means needed for carrying on the business of the University.
  10. To supervise the Instruction and Teaching of the University.
  11. To entertain adjudicate upon and if thought fit redress the grievances of members of the Senate on appeal against the acts of the Senate and of the Officers of the University the Professors the Teaching Staff the Graduates Under-Graduates and the University Servants who may for any reason feel aggrieved otherwise than by an Act of the Court.
  12. To select a seal and arms for the University and have the sole custody and use of the seal.
  13. To borrow money on behalf of the University and for that purpose (if the Council think fit) to mortgage all or any part of the property of the University whether real or personal or give such other security whether upon such real or personal property or otherwise as the Council think fit.
- 2.—The Council shall obey and carry out the Statutes and the Resolutions of the Court.

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#### SECTION 25.

##### POWERS OF THE SENATE.

- 1.—The Senate shall subject to review by the Council have the government management and carrying out of

the curriculum instruction and education afforded by the University the examinations held by the University recommendations for degrees diplomas certificates fellowships and scholarships and the discipline (whether intra-mural or extra-mural) of the students or undergraduates of the University and the carrying out of such discipline.

2.—Such matters as shall be committed to the Senate by the Council shall be transacted by the Senate.

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#### SECTION 26.

Contracts made by or on behalf of the University shall be validly made and binding on the University if made as follows—

- (1) Any contract which if made between private persons would be by law required to be in writing and if made according to English law to be under seal may be made on behalf of the University in writing under its common seal and such contract may be in the same manner varied or discharged.
  - (2) Any contract which if made between private persons would be by law required to be in writing and signed by the parties to be charged therewith may be made on behalf of the University in writing signed by any person acting under the express or implied authority of the Council and such contract may in the same manner be varied or discharged.
  - (3) Any contract which if made between private persons would by law be valid although made verbally only and not reduced into writing may be made either in writing or verbally on behalf of the University by any person acting under the express or implied authority of the Council and such contract may be in the same way varied or discharged.
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## SECTION 27.

1.—These Statutes shall be interpreted in such manner as not to conflict with the Charter.

2.—Words defined in the Charter or Statutes shall have the same meaning in the Ordinances and Regulations unless the context be repugnant thereto.

**In Witness** whereof We have caused these Our Letters to be made patent. **Witness** Ourself at Westminster the twenty-fourth day of March, in the sixty-third year of Our reign.

**By Warrant** under the Queen's Sign Manual.

MUIR MACKENZIE.



*Seal.*

## Birmingham University Act 1900.

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### ARRANGEMENT OF SECTIONS.

	SECTION
Preamble.	
Short title ...	1
Commencement of Act ...	2
Dissolution of Mason University College and repeal of Act of 1897 ...	3
Transfer of property to University of Birmingham ...	4
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Transfer of powers to nominate members of certain governing bodies ...	8
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Power of University to choose representative on General Medical Council ...	10
Exemption of University from rates ...	11
Saving for existing officers of Mason University College ...	12
Application of certain provisions of Scheme scheduled to Queen's College Birmingham Act 1867 ...	13
As to jurisdiction of Charity Commissioners ...	14
Costs of Act ...	15

## AN ACT

To Transfer all the property and liabilities of Mason University College in the City of Birmingham, and to repeal the Mason University College Act 1897; to confer certain powers on the said University; and for other purposes.

[*Royal Assent, 25th May, 1900.*]

WHEREAS the late Sir Josiah Mason founded out Preamble of his own resources in Birmingham an institution for the promotion of thorough systematic education and instruction specially adapted to the practical mechanical and artistic requirements of the manufactures and industrial pursuits of the Midland District of England which subsequently became known as the Mason Scientific College:

And whereas the said Institution was by the Mason University College Act 1897 incorporated under the name of Mason University College with a new constitution and powers and all the lands and other property vested in the Trustees of the said Institution were by the said Act vested in the said College:

And whereas the said Act expressly contemplated that the said College might become a member of a University to be established having power to grant degrees in arts sciences medicine and surgery:

And whereas upon the petition of the said College and of the Corporation of the City of Birmingham and of the School Board for the said City and of the Governors of the Grammar School of King Edward the

Sixth in the said City and others Her Majesty has been pleased to grant a Charter establishing in the said City of Birmingham a University by the name and style of the University of Birmingham with faculties of Science Arts Medicine and Commerce and such other faculties as the Statutes of the University may from time to time prescribe :

And whereas the said Charter directs that the University shall be both a Teaching and an Examining University and shall further the prosecution of original research in all its branches :

And whereas the Governors of the said College are desirous and it is expedient that the College be merged in the University and that all its property and liabilities be transferred to and vested in the University and that the Mason University College Act 1897 be repealed :

And whereas the Council of the City of Birmingham and the Overseers of the Poor of the Parish of Birmingham are desirous and it is expedient that the exemption from local rates granted to the said College be continued to the said University :

And whereas it is expedient to empower the said University to hold examinations under section three of the Medical Act 1886 and to elect a representative on the General Council mentioned in section seven of the same Act :

And whereas it is provided by a Scheme made by the Court of Chancery which is scheduled to and confirmed by the Queen's College Birmingham Act 1867 that the

physicians and surgeons of the Queen's Hospital at Birmingham shall hold their respective offices on condition of giving to all students of the Queen's College at Birmingham such clinical instruction in kind and quantity and in such manner as shall from time to time be required by the medical examining boards therein referred to and that the students of the said College shall at all times have free access to the said Hospital for the purposes of clinical instruction upon payment of such fees and on such other terms and conditions as shall be from time to time agreed and that any dispute between the said College and the said Hospital regarding such fees terms or conditions or otherwise regarding the privileges to be enjoyed by the students of the said College or any such dispute as therein mentioned between the said Hospital and any physician or surgeon thereof shall be referred to the visitor of the said College whose decision shall be binding on the parties to the dispute:

And whereas in pursuance of an Order of the Chancery Division of the High Court made by the Hon Mr. Justice Chitty at Chambers on the twenty-second day of June one thousand eight hundred and ninety-two the medical and dental departments of the said Queen's College were closed and abandoned and the anatomical and other collections books and other things specified in the said Order and formerly belonging to the said Queen's College were handed over to and became the absolute property of the trustees of the Mason College:

And whereas the medical students of the Mason College have accordingly since the latter part of the year one thousand eight hundred and ninety-two received clinical instruction from the physicians and surgeons of the said Queen's Hospital:

And whereas it is now desirable to continue to the students in the Faculty of Medicine of the University the same rights and privileges as have been enjoyed first by the medical students of Queen's College and latterly by the medical students of Mason College under the provisions of the above-recited Scheme and Order:

And whereas it is expedient that the other provisions contained in this Act be made:

And whereas the objects of this Act cannot be attained without the authority of Parliament:

MAY IT THEREFORE PLEASE YOUR MAJESTY

That it may be Enacted and BE IT ENACTED by the Queen's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows (that is to say):—

Short title.

1.—This Act may be cited as the Birmingham University Act 1900.

Commencement  
of Act.

2.—This Act shall come into operation on the first day of October one thousand nine hundred which date is hereinafter referred to as the commencement of this Act.

3.—On the commencement of this Act Mason University College shall be dissolved and the Mason University College Act 1897 shall be repealed without prejudice to anything lawfully done or suffered thereunder and in particular without prejudice to the provisions of Part III. of the said Act for confirming or rendering valid certain leases sales exchanges estates interests rights payments and contracts therein referred to.

Dissolution of  
Mason  
University  
College and  
repeal of Act  
of 1897.

4.—On the commencement of this Act all property real and personal of every description (including things in action) which immediately before the passing thereof belonged to or was vested in Mason University College shall be by virtue of this Act without any conveyance or other instrument transferred to and vested in the University of Birmingham for all the estate and interest therein of Mason University College and shall be applied to the objects and purposes for which the University is incorporated.

Transfer of  
Property to  
University of  
Birmingham.

5.—(1) Any three Governors present at a meeting of the Council of the University and voting against any resolution passed or order made at such meeting with respect to any lease sale exchange mortgage disposition or contract of or relating to any property of the University or with respect to the borrowing of money may appeal against such resolution to the visitor subject to the following conditions:—

Appeal to  
visitor with  
respect to  
management of  
property &c.

- (A) The appeal must be made in writing signed by the appellants within seven days after the date of the meeting :

(b) Notice of the appeal stating the grounds thereof in writing signed by one or more of the appellants must be given to the Secretary of the University within the said period of seven days.

(2) The visitor shall if desired hear the appellants and the Council and the decision of the visitor allowing disallowing or modifying the resolution or as the case may be shall be binding and final.

Transfer of liabilities to University of Birmingham.

6.—On the commencement of this Act all debts and liabilities of Mason University College shall be by virtue of this Act transferred and attach to and be discharged and satisfied by the University of Birmingham.

Saving for agreements deeds actions &c.

7.—All agreements awards contracts deeds and other instruments and all actions and proceedings and causes of action or proceedings which immediately before the commencement of this Act were existing or pending in favour of or against Mason University College shall continue and may be carried into effect enforced and prosecuted by or in favour of or against the University of Birmingham to the same extent and in like manner as if the University instead of the College had been party to or interested in the same respectively.

Transfer of powers to nominate members of certain governing bodies.

8.—The power or right of Mason University College to appoint or nominate a member of the Governing Body of any educational or charitable institution shall on the commencement of this Act be transferred to and

may be exercised by the Council of the University of Birmingham.

9.—The University of Birmingham is hereby empowered to hold qualifying examinations in medicine surgery and midwifery for the purpose of registration under the Medical Acts as if the University had been a university in the United Kingdom legally qualified at the passing of the Medical Act 1886 to grant diplomas in medicine and surgery; and the provisions of Part I of that Act shall be read and have effect accordingly,

10.—The Council of the University of Birmingham shall be entitled to choose one representative to be a member of the General Council constituted by the Medical Acts; and section seven of the Medical Act 1886 shall be read and have effect as if the University of Birmingham had been expressly included therein.

11.—The University of Birmingham shall not be assessed or rated to pay or contribute to any borough improvement or parochial rates in respect of any buildings lands or property of any description occupied by the University which were exempt from rating under the Mason University College Act 1897: Provided always that the exemption herein contained shall not extend to any part of such buildings land and property which shall for the time being be occupied by any member officer or servant of the University and the

Power of  
University of  
Birmingham  
to hold  
examinations  
under 49 & 50  
Vict. c. 48.

Power of  
University  
to choose  
representative  
on General  
Medical  
Council.

Exemption of  
University  
from rates.

parts of buildings so occupied shall be rated as separate tenements.

Saving for  
existing officers  
of Mason  
University  
College.

12.—All professors and other members of the teaching staff of Mason University College and all officers and servants of the College shall hold as nearly as practicable the same offices and places in the University of Birmingham as they held in the said College immediately before the commencement of this Act and upon the same terms and conditions unless and until the Council of the University otherwise decide.

Application of  
certain  
provisions of  
Scheme  
scheduled to  
Queen's College  
Birmingham  
Act 1867.

13.—Clauses fifty and fifty-one of the Scheme set forth in the Schedule to the Queen's College Birmingham Act 1867 shall be read and have effect as if the University were mentioned therein instead of the College so that students in the faculty of medicine of the University shall have at all times provided for them by the physicians and surgeons of the Queen's Hospital at Birmingham such clinical instruction as therein mentioned and shall have free access to the said Hospital for the purposes of clinical instruction as therein mentioned. Provided that any such dispute between the University and the said Hospital or between the said Hospital and any physician or surgeon thereof as therein mentioned shall be referred to the visitor of the University whose decision shall be binding on the parties to the dispute.

As to  
jurisdiction of  
Charity  
Commissioners.

14.—The Charitable Trusts Acts 1853 to 1894 shall not extend to the University of Birmingham or any College or Hall therein and the said University and

any such College or Hall shall be exempt from the control or jurisdiction of the Charity Commissioners.

15.—The costs charges and expenses of and Costs of Act. incidental to preparing obtaining and passing this Act shall be defrayed by the University of Birmingham out of the income of the property by this Act transferred to the University or if the Council of the University think fit out of money representing capital or to be raised by sale or mortgage of some part of the said property.

#### NOTE ON CLAUSE 13.

By an Act entitled "An Act for the Regulation of the Queen's College at Birmingham and for incorporating the Queen's Hospital at Birmingham" but having the short title of "The Queen's College Birmingham Act 1867" which received the Royal Assent on the 12th day of August 1867 the Queen's Hospital was separated from the Queen's College and separately incorporated by the title of "The Queen's Hospital Birmingham" but for the purpose of preserving the right the Queen's College had of clinical instruction for its students in the Hospital the following clauses Numbered 50 and 51 in the Scheme sanctioned by the Act were inserted in the Schedule to the Act :—

The Hospital shall be maintained as a Clinical Hospital and afford every facility for clinical instruction; and such persons shall from time to time be appointed to be Physicians and Surgeons of the Hospital whose certificates as to clinical instruction shall be

accepted by the Medical Examining Boards of the United Kingdom ; and such Physicians and Surgeons shall hold their respective offices on condition of giving to all students of the *College* such clinical instruction in kind and quantity and in such manner as shall from time to time be required by the said Medical Examining Boards.

The students of the *College* shall at all times have free access to the Hospital for the purposes of clinical instruction, upon payment of such fees and on such other terms and conditions as shall be from time to time agreed upon between the Council and the Hospital. Any dispute between the *College* and the Hospital regarding such fees terms or conditions or otherwise regarding the privileges to be enjoyed by the students of the *College* under this clause or the preceding clause or any dispute between the Hospital and any Physician or Surgeon thereof as to the preceding clause shall be referred to the Visitor of the *College*, whose decision shall be binding on the parties to the dispute.

The effect of Clause 13 is to substitute *University* for *Queen's College*.

## ORDINANCES OF THE UNIVERSITY.

MADE BY THE COUNCIL in accordance with the provisions of Section 14 of the Second Schedule to the Charter.

### FINANCES, INVESTMENTS, AND ACCOUNTS.

1.—The Finances, Investments, and Accounts of the University shall be controlled by the Council, who shall report thereon from time to time to the Court as may be required by the regulations of the Court.

### FEES.

2.—The payment and amount of fees to be exacted within the University or in relation to the enjoyment of privileges therefrom shall be determined by the Council.

### FELLOWSHIPS, SCHOLARSHIPS, EXHIBITIONS AND PRIZES.

3.—The provisions and tenure of Fellowships, Scholarships, Exhibitions, Prizes, Rewards and pecuniary and other aids, shall be determined by the Council on the recommendation of the Senate.

### FACULTIES.

4.—The Members of the FACULTY OF SCIENCE shall be the Principal and Vice-Principal, and the Professors of Mathematics, Physics, Chemistry, Zoology, Botany, Geology, Engineering, Metallurgy, Mining, Brewing, and Education.

To this Faculty shall be attached the Professors of Anatomy, Physiology, Pathology and Bacteriology, Hygiene and Public Health, and Mental and Moral Philosophy.

5.—The Members of the FACULTY OF ARTS shall be the Principal and Vice-Principal, and the Professors of Latin and Greek, English, French, German, Mental

and Moral Philosophy, History, Education, and Music, and the Lecturer on Spanish and Italian.

To this Faculty shall be attached the Professor of Mathematics.

6.—The Members of the FACULTY OF MEDICINE shall be the Principal and Vice-Principal, and the Professors of Anatomy, Physiology, Medicine, Surgery, Pathology and Bacteriology, Hygiene and Public Health, Therapeutics, Midwifery, Gynæcology, Forensic Medicine, Mental Diseases, Operative Surgery, Ophthalmology, and the Lecturer on Materia Medica.

To this Faculty shall be attached the Professors of Physics, Chemistry, and Zoology.

7.—The Members of the FACULTY OF COMMERCE shall be the Principal and Vice-Principal, the Professor of Commerce and Public Finance, and the Professors of Accounting and Commercial Law.

To this Faculty shall be attached the Professors of English, French, German, Mathematics, Philosophy, and History, and such other Professors as may for the time being be taking part in the courses of study prescribed for degrees in Commerce.

8.—Professors or Lecturers attached to any Faculty without being Members shall receive notice of and shall be entitled to attend all meetings of such Faculty, but shall be entitled to vote only upon questions relating to the subjects of their respective Chairs or Lectureships.

#### DUTIES AND POWERS OF FACULTIES.

9.—Each Faculty shall have the right of taking into consideration all matters bearing upon its work and development.

10.—Subject to approval by the Senate and Council each Faculty shall be responsible for the transaction of all academic business specially pertaining to it.

11.—It shall be the duty of each Faculty, subject to review by the Senate and Council, to draft regulations as to degrees, diplomas, certificates, scholarships and prizes falling within the province of the Faculty, and to draft the courses of study and the time-tables and schemes of examinations of the Faculty.

12.—It shall be the privilege and duty of each Faculty to report, according to the method provided by the Regulations for the time being, upon the candidates for, or persons to be proposed for, appointment to all teaching posts and examinerships belonging to the Faculty, before the appointments are made by the Council.

#### APPOINTMENT AND TENURE OF OFFICE OF PROFESSORS, LECTURERS, TEACHING STAFF AND OFFICERS.

13.—The manner of appointment and the duties of the Professors, Lecturers, Teaching Staff, External Examiners and Librarian, shall in each case be determined by the Council after report thereon by the Senate.

14.—The duties of the Registrar shall be determined by the Council, after report thereon by the Senate.

15.—The emoluments, allowances, and salaries of the officers of the University, its Professors, Lecturers, Teaching Staff, Secretary, Registrar, and servants shall be determined by the Council.

16.—Professors and Independent Lecturers shall hold office during good behaviour, but may be removed by the Council for good cause as defined by the Statutes of the University; provided also that it shall be competent for the Senate, either on its own initiative or upon request by the Council, to take into consideration the case of any Professor or Independent Lecturer, and for a majority of the members of the Senate present and voting at a duly convened meeting of the Senate (such voting to be by ballot), to represent to the Council that in the general interest of the University or for some special reason it is desirable that the engagement of

any Professor or Independent Lecturer should be determined, and upon receipt of such representation the Council may terminate the engagement of such Professor or Lecturer by six months' notice in writing.

17.—The engagements of members of the Teaching Staff (other than Professors and Independent Lecturers) and of the Secretary, Registrar, officers, and servants of the University may, subject to any special provision in the terms of their engagements, respectively, be determined by three months' notice in writing on either side.

#### PROFESSORS AND LECTURERS.

18.—Each Professor and Lecturer shall, on his appointment, enter into an agreement with the University, which shall indicate:—

- (i.) The subject or subjects committed to the office undertaken;
- (ii.) The arrangement as to stipend;
- (iii.) Any special terms of the appointment.

19.—A Professor or Lecturer shall not resign his appointment except by three months' notice in writing, which notice shall end at the expiration of some one of the University terms as regulated by the Calendar of the University for the time being; a Professor or Lecturer may, however, resign his appointment on the 30th of September in any year by giving notice in writing at any time in the preceding months of July or August, and the Council shall at all times have the power to waive notice to such extent as it may think fit.

20.—Every Professor and Independent Lecturer, while confining himself within the limits of the subject committed to his charge, shall have complete freedom of teaching, so far as the matter and methods of his instruction are concerned, subject only to the approval of his Faculty and of the Senate and Council in regard to the amount and times of his teaching and the scope and standard of such of his courses as form integral parts of Degree courses in the University.

## EMERITUS PROFESSORS.

21.—The Court shall have power on the recommendation of the Council to confer the title of Emeritus Professor upon any Professor of the University on or after his retirement, in recognition of conspicuous services to the University. The title “Emeritus Professor” shall in no case be conferred unless the connexion with the University shall have extended over a period of not less than ten academic years, and then only so long as the Professor in question does not hold another office of a similar character. An Emeritus Professor shall for all purposes of courtesy and on ceremonial occasions, be upon the same footing as members of the Senate, but shall not be entitled to perform any administrative or executive functions as a member of the Senate or otherwise. A previous and continuous term of service in Mason University College or in Mason College, Birmingham, or in the Faculty of Medicine of Queen’s College, Birmingham, shall be deemed to be service in the University for the purposes of this Ordinance.

## SPECIAL LECTURERS OR READERS.

22.—The Council shall have power on the recommendation of a Faculty and of the Senate to appoint as special University teachers persons whether on the regular teaching staff or not, and to recognise the courses delivered by them as qualifying courses for University Examinations and Degrees. Such persons shall be selected on the ground of scholarship or special knowledge and ability, and shall be appointed on such terms of tenure and status as the Council may decide.

## DISCIPLINE.

23.—Every student shall be subject to such regulations as shall from time to time be passed by the Senate and approved by the Council.

24.—There shall be a Committee of Discipline, consisting of the Principal, the Vice-Principal, the Deans

of the Faculties, and the Secretary of the University; which Committee shall report to the Senate.

25.—Every Professor, Reader, Lecturer, Assistant Lecturer, or Demonstrator shall have the power, and it shall be his duty, to check any disorderly conduct that may occur in a class room or laboratory, and if he deem it necessary may require any student to withdraw from the room for the day. In the event of such an occurrence in a room under the charge of an Assistant Lecturer or Demonstrator, he shall report the matter without delay to his Professor or immediate chief.

26.—Professors, Lecturers, and other officers shall have the power to check disorderly or improper conduct, or any breach of Regulations arising in any part of the precincts of the University.

27.—Any member of the Discipline Committee shall have power to exclude any student from the University or its precincts until the next meeting of the Discipline Committee which shall be held as soon as possible after each such exclusion, and the circumstances of the case shall be laid before the meeting for further adjudication.

28.—The Discipline Committee shall have power to suspend any student from attendance at the University for any period not extending beyond the next meeting of the Senate. Every such suspension shall be reported to the Senate at its next meeting, and the Senate shall have power to extend the period of suspension for the remainder of a University term, and subject to the approval of the Council, to expel.

29.—Habitual neglect of work in any class, shall be regarded as a breach of discipline, and may subject the student to suspension.

#### MATRICULATION.

30.—Matriculation is the formal admission of a student to membership of the University.

31.—An Examination called the Matriculation Examination shall be held by the University at least

once in each year at such time and in such subjects and under such conditions as may be prescribed by Regulations.

32.—Any person who shall have paid to the University the prescribed fee, and shall have satisfied such other conditions as may be prescribed by Regulations, shall be entitled to be admitted to the Matriculation Examination.

33.—The University may by Regulations recognise the Matriculation or any other examination or examinations of any British or foreign University or of any public Educational Authority in his Majesty's dominions as exempting from the Matriculation Examination of the University or from any part thereof.

34.—Any person who shall have passed the Matriculation Examination, or a Schools' Leaving Examination of the University, or other examination or examinations recognised by the University as exempting from the Matriculation Examination, and shall have paid to the University the fee prescribed by these Ordinances, and shall have satisfied such other conditions as may be prescribed by Regulations, shall be entitled to be matriculated.

#### UNDERGRADUATES AND OTHER STUDENTS.

35.—Every person who has been matriculated shall be entitled to the privileges of membership of the University and of the Guild of Undergraduates, so long as he is in actual attendance on a course of study in the University approved by a Faculty of the University, but no longer.

36.—The University may admit all persons who shall have satisfied such conditions as may be prescribed by Regulations to any of the courses of study offered by the University, although they have not passed the Matriculation Examination or any examination exempting from the Matriculation Examination; but such students shall not be entitled to be matriculated or to be members of the Guild of Undergraduates, nor shall

they be entitled to wear the academic dress prescribed for Undergraduates.

#### DEGREES IN THE FACULTIES OF SCIENCE, ARTS, AND COMMERCE.

37.—In the Faculty of Science there shall be the following degrees, viz. :—

Bachelor of Science	,,	B.Sc.
Master of Science	,,	M.Sc.
Doctor of Science	,,	D.Sc.

In the Faculty of Arts there shall be the following degrees, viz. :—

Bachelor of Arts	,,	B.A.
Master of Arts	,,	M.A.
Doctor of Letters	,,	D.Litt.
Doctor of Philosophy	,,	D.Phil.

In the Faculty of Commerce there shall be the following degrees, viz. :—

Bachelor of Commerce, to be denoted by the letters B.Com.

Master of Commerce, to be denoted by the letters M.Com.

38.—The courses of study and the number and nature of the examinations qualifying for admission to these degrees respectively shall be prescribed by regulations.

39.—Attendance upon courses of study in the University shall not in general be accepted as any part of the qualification necessary for a degree unless the candidate for the degree shall have previously been matriculated; but in exceptional cases the Senate may recognise as part of such qualification attendance on courses of study taken previous to matriculation,

provided always that no examination passed previous to matriculation be recognised as a qualifying University Examination.

40.—Except as hereinafter provided, no candidate shall be admitted to the degree of Bachelor until he shall have attended in the University the prescribed courses of study extending over a period of at least three years.

41.—No Bachelor of the University shall be admitted to the degree of Master until at least one year after the time of his admission to the degree of Bachelor.

42.—No Bachelor or Master of the University shall be admitted to the degree of Doctor until at least two years after the time of his admission to the degree of Bachelor.

43.—The Senate shall have the power of admitting graduates or persons who have passed Degree Examinations of other Universities to the courses and examinations for the higher degrees of Master and Doctor under conditions prescribed by Regulations without requiring such persons to attend the courses of study or pass the examinations qualifying for the degree of Bachelor. Such students after being matriculated shall be called Graduate Students, and shall be members of the Guild of Undergraduates.

44.—The Senate shall have the power of recognising attendance at another University or University College as part of the attendance qualifying for the Degree of Bachelor, and of recognising examinations passed at such other University as exempting from the first year's examination for such degree; provided that no candidate from another University be admitted to the Degree of Bachelor until he shall have attended in the University the prescribed courses of study extending over a period of at least two years.

## PAST STUDENTS OF MASON UNIVERSITY COLLEGE.

45.—Students who have passed the Intermediate Examination in Science or Arts of the University of London after at least one session of regular study at Mason University College shall be excused the First Year's Course and the Intermediate Examination, and shall enter on the Degree Course as second year students of the University.

46.—Persons who, on October 1st, 1900, were regular students of Mason University College having passed the Intermediate Examination in Science or Arts of the University of London, and having subsequently spent at least one session at the College in regular study for the Final Examination, may be excused the first two years and the Intermediate Examination and may enter as third year students of the University if, in the opinion of their Faculty, they have fulfilled in the College conditions sufficiently nearly corresponding to those laid down for second year students.

47.—Persons who, on October 1st, 1900, were regular students of Mason University College having passed the Intermediate Examination in Science or Arts of the University of London, and having subsequently spent at least two sessions at the College in regular study for the Final Examination may be excused the Intermediate Examination and further attendance at lectures, may enter the University and take rank as if they had completed three years at the University, and may present themselves at a Final Examination for a Degree if, in the opinion of their Faculty, they have fulfilled in the College conditions sufficiently nearly corresponding to those laid down for second and third year students of the University.

48.—Past Students of Mason University College who have passed the 'Bachelors' Examination in the University of London, after a course of at least one year's regular study at Mason University College in two subjects at least, shall be permitted to enter the University

and present themselves at the Examination for the Masters' Degree after at least one further year of study at the University, as if they had taken the Bachelor's Degree of the University of Birmingham.

#### DEGREES IN THE FACULTY OF MEDICINE.

49.—In the Faculty of Medicine there shall be the following degrees, viz.:—

Bachelor of Medicine,	to be denoted by the letters	M.B.
Doctor of Medicine	"	M.D.
Bachelor of Surgery	"	Ch.B.
Master of Surgery	"	Ch.M.
Bachelor of Science in Public Health	"	B.Sc. (Public Health.)
Master of Science in Public Health	"	M.Sc. (Public Health.)
Bachelor of Dental Surgery	"	B.D.S.
Master of Dental Surgery	"	M.D.S.

50.—In the Faculty of Medicine there shall be a Diploma in Dental Surgery, entitled Licentiate in Dental Surgery (L.D.S.), which shall be registrable in accordance with the Dentists Act, 1878 (41 and 42 Vict., xxxiii., Clause xviii.).

51.—The courses of study and the number and nature of the examinations qualifying for admission to these degrees, respectively, and to the Licentiate of Dental Surgery, shall be prescribed by Regulations.

52.—No attendance upon courses of study in the University shall be accepted as any part of the qualification for a degree, unless the candidate for the degree shall have previously passed the Matriculation Examination of the University as prescribed for Medical students or an examination recognised by the University as exempting from the same.

53.—Except as hereinafter provided, no candidate shall be admitted to either or both of the degrees of Bachelor of Medicine and Bachelor of Surgery unless he shall have attended the courses of study prescribed by Regulations extending over a period of at least five years after matriculation, of which the first four years must be spent in the University, and the fifth year

either in the University of Birmingham or some other school or schools of medicine recognised for this purpose by the University.

54.—No candidate shall be admitted to the higher degrees of Master of Surgery or Doctor of Medicine unless he has attained both the degrees of Bachelor of Medicine and Bachelor of Surgery in the University, and until a further year shall have elapsed after such Bachelor's degrees were conferred.

55.—No candidate shall be admitted to the degree of Bachelor of Science in Public Health unless he has previously attained to both the degrees of Bachelor of Medicine and Bachelor of Surgery in the University.

56.—No candidate shall be admitted to the degree of Bachelor of Dental Surgery who has not obtained a License in Dental Surgery from some body legally entitled to confer such qualification, and until a period of twelve months shall have elapsed after he obtained such License.

57.—No candidate shall be admitted to the degree of Master of Dental Surgery unless he shall have previously attained to the degree of Bachelor of Dental Surgery, and until a further period of twelve months shall have elapsed after he obtained such Bachelor's degree.

58.—Notwithstanding the preceding ordinance, the Senate shall have the power of admitting graduates or persons who have passed Degree Examinations of other Universities to the courses and examinations for the higher degrees of Master and Doctor under conditions prescribed by Regulations without requiring such persons to attend the courses of study or pass the examinations qualifying for the degree of Bachelor. Such students shall be called Graduate Students, and shall be members of the Guild of Undergraduates.

59.—The Senate shall have power of recognising attendance at another University as part of the attend-

ance qualifying for the degrees of Bachelor of Medicine and Bachelor of Surgery, and of recognising examinations passed at such other Universities as exempting from the examination in Chemistry, Physics, and Comparative Anatomy, for such degrees, provided that no candidate from another University be admitted to the degree of Bachelor until he shall have attended in the University the prescribed courses of study extending over a period of at least three years.

PAST STUDENTS OF THE BIRMINGHAM SCHOOLS OF MEDICINE AND DENTISTRY.

60.—Persons who, on October 1st, 1900, were students of the School of Medicine and who originally entered as first year students of the school, and have since regularly pursued their studies in the school, shall be permitted to present themselves for the examinations of the University without passing its matriculation examination, and without repeating any courses of lectures which they may already have taken out.

61.—Students of the School of Medicine falling under the above category who have passed any medical examinations in any British or Irish University shall be allowed to count such examination or examinations in lieu of the corresponding examination or examinations in the University of Birmingham, but no such allowance shall be made in the case of students who have passed examinations conducted by licensing bodies other than Universities. Provided that in all cases it shall be essential that the student shall pass the Final Examination of the University of Birmingham.

62.—Past students of the Birmingham Medical School who have taken out their whole course in Birmingham, and are duly qualified Medical Men, shall be permitted at any period during the seven years commencing on the 1st of October, 1900, to present themselves for a Final Examination for the Degrees of Bachelor of Medicine and Surgery.

63.—Past students of the Birmingham Dental School (including those who qualified not later than the November, 1900, Examination of the Royal College of Surgeons of England) who have taken out their whole course in the Birmingham School, and are duly qualified and Registered Dental Surgeons, shall be permitted at any period during the seven years commencing on the 1st of October, 1900, to present themselves for a Final Examination for the Degree of Bachelor of Dental Surgery.

64.—That Students who enter the Department of Dentistry in Mason University College in the years 1897 to 1899 inclusive, and have obtained both the License in Dental Surgery and the qualifications in Medicine and Surgery from some body legally qualified to confer such qualifications, and produce evidence that after having obtained the License in Dental Surgery they have received instruction in the Dental Department of a General Hospital for a period of not less than six months, be admitted to the Degree of Bachelor in Dental Surgery on passing the final examination for such Degree held by the University.

#### EXTERNAL EXAMINERS.

65.—The appointments of External Examiners shall be made in the first instance for one year, but may be renewed annually for the two following years.

#### EXAMINATIONS AND BOARDS OF EXAMINERS.

66.—The Matriculation Examination of the University shall be conducted by Professors or Lecturers of the University appointed for this purpose by the Senate, without the assistance of External Examiners.

67.—Class Examinations and Examinations provided for students who are neither undergraduates nor candidates for any Degree of the University shall be conducted by the Professors or Lecturers of the University without the assistance of External Examiners.

68.—There shall be a Board of Examiners for the Matriculation Examination, consisting of the Principal and Vice-Principal, the Examiners who are taking part in the Examination, and the Professor of Education, the Principal being Chairman of the Board.

69.—For every University Examination prescribed by the Regulations for Degrees of the University there shall be a Board or Boards of Examiners, consisting of the internal and external Examiners who are taking part in the conduct of the Examination, together with the Dean of the Faculty to which the Examination belongs. The Dean of the Faculty shall be the Chairman of all such Boards of Examiners as belong to that Faculty.

70.—The Principal and Vice-Principal shall be members of all the Boards of Examiners.

#### SCHEDULES OF QUALIFICATION.

71.—Before admission to any University Examination each candidate is required to present to the Registrar a Schedule of Qualification certifying that he has attended the lectures, classes, laboratory or hospital instruction prescribed by the Regulations for that examination to the satisfaction of the Professors or other teachers concerned, and that he has passed such class examinations and performed such other exercises as his teachers may prescribe in connexion with their own courses, to the satisfaction of the Faculty.

#### DEGREES, DIPLOMAS, SCHOLARSHIPS, AND OTHER UNIVERSITY HONOURS.

72.—The ordinary Degrees, Diplomas, Certificates, Scholarships, Prizes and Honours of the University (except Honorary Degrees) shall be awarded by the Council on the nomination of the Senate.

73.—Honorary Degrees may be conferred upon persons approved by the Council on the nomination of the Senate.

74.—Degrees whether ordinary or honorary shall be conferred at a special congregation of all members of the University to be held for the purpose at least once a year, and such persons other than members of the University as the Council may direct shall be invited to be present. The formal admission of persons to degrees shall be made by the Chancellor, or in his absence by the Vice-Chancellor. Recipients of ordinary degrees shall be presented to the Chancellor or Vice-Chancellor by the Dean of the Faculty to which the degree belongs. Each recipient of an Honorary Degree shall be presented by a member of the University specially appointed for the purpose by the Council; provided that no person shall be admitted to any degree, ordinary or honorary, until he has signed the Register of Graduates and paid the fees prescribed. No University fee shall be required of persons admitted to Honorary Degrees.

75.—Notwithstanding this ordinance, degrees may in exceptional cases, on the recommendation of the Senate, be conferred upon persons *in absentia*, by special warrant, signed by the Chancellor or the Vice-Chancellor.

76.—The Council may on the recommendation of the Senate revoke the Degree or Degrees, Diplomas, Certificates and distinctions and all privileges connected therewith of any graduate of the University who shall be convicted of felony or of any indictable misdemeanour, or whose name shall have been removed for misconduct by a properly constituted legal authority from any official register or roll of members of the profession to which he belongs, and may restore on cause being shown any person whose degree has been revoked to the degree he previously enjoyed without further examination.

77.—Degrees may be conferred on members of the teaching staff of the University *ex-officio*.

## INSPECTION OF SCHOOLS.

78.—The regulations for the Inspection and Examination of Schools and other Institutions, and the scholars and students therein, and the regulations for the award of certificates of proficiency, shall be determined by the Council after report thereon by the Senate.

## AFFILIATED INSTITUTIONS.

79.—A College, School, or other Educational Institution in the Midland Counties may apply to be recognised as an affiliated institution of the University. Such recognition shall only be given upon evidence of efficiency satisfactory to both Senate and Council. Students of any such affiliated Institution shall be permitted to attend at such Institution a course of study approved by the University instead of the whole or part of the first year's course of study at the University, in the Faculties of Science, Arts, Medicine or Commerce; and after presentation of Schedules of Qualification certifying that they have attended the classes and laboratory instruction and passed the class examinations prescribed by the University, and have been matriculated in the University, shall be admitted to the first University Examinations in those Faculties.

80.—Any College, School, or Institution desiring to take advantage of the foregoing ordinance must—

- (a) Give satisfactory evidence of its educational status and that it is established on a permanent and effective footing.
- (b) Submit, for the approval of the Senate, courses of study of such scope and standard as may be accepted by the University instead of the whole or part of the first year's courses in the Faculties of Science, Arts, Medicine and Commerce, or any part thereof.

81.—The University shall in no case grant the privilege of this ordinance to any College, School, or Insti-

tution for a period of more than five years, but such privilege may be renewed for a further period after a report from the Senate.

82.—The University reserves the right of inspecting the libraries, laboratories, and the equipment and apparatus provided for practical work, and of enquiring into the qualifications of the teachers appointed to conduct the qualifying courses.

#### ASSOCIATE MEMBERS OF THE GUILD OF GRADUATES.

83.—Persons who were Associates of Mason University College on October 1st, 1900, may be admitted as Associate Members of the Guild of Graduates, and on all ceremonial and social occasions they shall be put on the same footing as Members of the Guild, but without power of voting at Meetings of the Guild.

84.—Associates may make application to their respective Faculties on or before 1st October, 1905, for admission to the Degree of Bachelor. They will be required to submit at the same time copies of their contributions to Medicine, Science, or Literature, or a Thesis specially composed for the occasion, and an account of the appointments which they hold or have held. These papers shall be submitted to Assessors, one of whom shall be an external examiner, and in the event of a Thesis having been submitted, these Assessors shall be at liberty to question the candidate upon it, should they see fit, or to call upon him to pass any examination they may think proper. On the report of the Assessors the Faculty shall decide in each case whether they will recommend the Senate to nominate the candidate for a Degree.

85.—The fee payable by Associates who are Candidates for any degree shall be £5.

86.—Students and members of the staff of Mason University College who would have been eligible for the Associateship before 30th September, 1901, had the College continued to exist, shall be permitted to apply

for admission to the above privileges before the 30th September, 1901.

#### THE GUILD OF GRADUATES.

87.—Every person who has been admitted to a Degree in any Faculty of the University shall, after the lapse of such time as may hereinafter be prescribed by regulations, be eligible to be a Member of the Guild of Graduates, and may be elected a Member of the Guild after payment of such fee as may also be so prescribed.

88.—Any Member of the Guild of Undergraduates who shall become eligible to be a Member of the Guild of Graduates shall forthwith cease to be a Member of the Guild of Undergraduates.

89.—The Guild of Graduates shall be an organised Association of Graduates for the furthering of their common interests, and shall be the recognised means of communication between the Graduates on the one hand and the Court of Governors, Council, Senate, and other authorities of the University on the other hand.

90.—The Guild of Graduates may make laws for its internal management and administration, and the election of its officers, the alteration of its laws and all other matters requiring to be dealt with.

#### THE GUILD OF UNDERGRADUATES.

91.—The Guild of Undergraduates shall consist of all the Undergraduate Students of the University. It shall be an organised Association of such Undergraduates for the furthering of their common interests and shall be the recognised means of communication between the Undergraduates on the one hand, and the Court of Governors, Council, Senate, and other authorities of the University on the other hand.

92.—The Guild of Undergraduates may make laws for its internal management and administration the election of its officers, the alteration of its laws and all other matters requiring regulation, but no law shall be effective until approved by the Council.

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Professor R. S. HEATH ( <i>Vice-Chairman and Secretary</i> ) Dorridge, Birmingham.	21st May, 1884

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Professor C. LAPWORTH 38, Calthorpe Road, Edgbaston.	10th May, 1881
Professor W. HILLHOUSE 43, Calthorpe Road, Edgbaston.	5th April, 1882
Professor PERCY F. FRANKLAND West Heath Road, Northfield	6th June, 1894
Professor F. W. BURSTALL Oakhill House, Upland Road, Selly Park.	29th July, 1896
Professor ADRIAN J. BROWN West Heath House, Northfield.	3rd May, 1899
Professor T. TURNER Springfields, Selly Hill.	5th Mar., 1902
Professor R. A. S. REDMAYNE Whiteholme, Farquhar Road, Edgbaston.	5th Mar., 1902
Professor GIBBERT KAPP Pen-y-coed, Pritchatt's Road, Edgbaston.	7th Dec., 1904
Professor STEPHEN M. DIXON 16, Montague Road, Edgbaston.	5th July, 1905

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Professor J. H. MUIRHEAD 1, York Road, Edgbaston.	29th Sept., 1897
Professor J. H. B. MASTERMAN St. Michael's Vicarage, Coventry.	13th June, 1902
Professor J. CHURTON COLLINS 2, Hagley Grove, Hagley Road, Edgbaston. <i>Also</i> 18, De Vere Gardens, London, W.	14th Dec., 1904
Professor Sir EDWARD ELGAR Plas Gwyn, Hereford.	11th Jan., 1905
Professor KARL WICHMANN	2nd Oct., 1907

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Professor BENNETT MAY .. . . . .	..	16th June, 1887
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Professor E. B. WHITCOMBE .. . . . .	..	15th March, 1888
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5, Norham Road, Oxford.

J. COOLE KNEALE, M.B., Ch.B. (Faculty of Medicine).

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in Bacteriology : { C. J. LEWIS, M.D., D.Sc., F.R.C.P. (Edin.).

*Junior Assistant* : L. G. J. MACKEY, M.B., Ch.B.

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Professor of Pathology in the University of Oxford.

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*Atherstone Grammar School*—SHELDON R. HART, Esq.

*Bewdley Grammar School*—Rev. S. R. JAMES.

*Birmingham Blue Coat School*—Sir JOHN C. HOLDER, Bart., and  
Mr. Alderman A. J. REYNOLDS.

*Birmingham, King Edward's School*—Sir OLIVER LODGE.

*Birmingham and Midland Institute*—Professor H. G. FIEDLER.

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*Coventry Grammar School*—Dr. T. WEBB FOWLER.  
*Derby School*—W. B. WORTHINGTON, Esq.  
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*Evesham, Prince Henry's Grammar School*—Mrs. SONNENSCHEIN.  
*Halesowen Grammar School*—Dr. ALEX. FINDLAY.  
*Handsworth Grammar School*—Professor BOSTOCK HILL and  
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*Hartlebury Grammar School*—G. W. GROSVENOR, Esq., J.P.  
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*Stratford-on-Avon, King Edward VI. Grammar School*—Professor  
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*Sutton Coldfield Grammar School*—Professor STEPHEN M. DIXON.  
*Tamworth Grammar School*—Rev. J. E. HUXLEY BLAKE, M.A.  
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(Edin.)

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### GOWNS.

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*Undergraduates*.—Gown of black stuff, similar to the Oxford Scholars' Gown, with the fore-arm seam open.

*Bachelors*.—Gown of black stuff with an open sleeve.

*Masters*.—Gown of black stuff or silk, similar to a Cambridge M.A. Gown with ribbons, but with a  $\perp$ -shaped slit in the sleeve.

*Doctors*.—Robe of scarlet cloth of the same shape as the Cambridge Doctors' Gown, trimmed with silk of the colour characteristic of the Faculty.

*Doctors' Undress*.—Gown of black stuff or silk of the same shape as the Masters' Gown, but edged with braid.

### HOODS.

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#### FACULTY OF SCIENCE.

*B.Sc.*.—Black silk or stuff edged with silver-grey watered silk.

*M.Sc.*.—Black silk lined with silver-grey watered silk.

*D.Sc.*.—Scarlet cloth lined with silver-grey watered silk.

#### FACULTY OF ARTS.

*B.A.*—Black silk or stuff edged with electric-blue watered silk.

*M.A.*.—Black silk lined with electric-blue watered silk.

*D.Phil. and D.Litt.*.—Scarlet cloth lined with electric-blue watered silk.

## FACULTY OF MEDICINE.

*M.B.* and *Ch.B.*—Black silk or stuff edged with cardinal watered silk.

*Ch.M.*—Black silk lined with cardinal watered silk.

*M.D.*—Scarlet cloth lined with cardinal watered silk.

## DEPARTMENT OF DENTISTRY.

*B.D.S.*—Black silk or stuff edged with dark red (Grenat) watered silk.

*M.D.S.*—Black silk lined with dark red (Grenat) watered silk.

## FACULTY OF COMMERCE.

*B.Com.*—Black silk or stuff edged with terra-cotta watered silk.

*M.Com.*—Black silk lined with terra-cotta watered silk.

## HONORARY DEGREE.

*LL.D.*—Scarlet cloth lined with bronze-green watered silk.

## CAPS.

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Undergraduates, Masters, and Doctors will wear the ordinary square College Cap, and Doctors in full dress will wear a cap of black velvet with a gold cord, lined with the colour characteristic of the Faculty.

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*Robe Makers to the University—*

MESSRS. EDE, SON, & RAVENSCROFT, 93 AND 94, CHANCERY LANE, LONDON.

# FACULTIES OF SCIENCE, ARTS, AND COMMERCE.

Session 1907-1908.

## UNIVERSITY BUILDINGS.

The courses in Pure Science and in the Faculties of Arts and Commerce are held in the University, Edmund Street ; and the courses in Applied Science (Engineering, Metallurgy, and Mining) are held in the University, Edgbaston. The offices of the University are situated for the present in Edmund Street, where all information respecting the admission of students may be obtained.

## UNIVERSITY TERMS.

The University Session, or academic year, is divided into three terms—Winter, Spring, and Summer. The WINTER TERM commences on Tuesday, October 1st, and ends on Saturday, December 14th, 1907 ; the SPRING TERM commences on Monday, January 13th, 1908, and ends on Saturday, March 28th ; the SUMMER TERM commences on Wednesday, April 22nd, and ends on Saturday, July 4th.

## ADMISSION OF STUDENTS.

1.—All the courses of study are open to men and women on the same terms. Separate cloak rooms and reading rooms in the east wing (ground floor) are reserved for the accommodation of women students.

2.—The classes and laboratories of the University are open to all who are sufficiently prepared to take advan-

tage of the instruction offered. Every person seeking admission as a student to a recognised course of instruction in preparation for a diploma, certificate, or other professional qualification must produce such testimonial or reference and pass such examination as shall be deemed necessary by the Vice Principal ; but no examination is as a rule deemed necessary in the case of students attending classes for the purposes of general culture, and not in preparation for any University Examination.

*Students who wish to join the courses in Engineering, who have passed no examination qualifying them for matriculation, are required to pass an entrance examination in mathematics, and in either experimental mechanics or chemistry of about the same standard as the matriculation examination.*

3.—Every student entering any Faculty is required to seek an interview with the Dean of his Faculty or the Vice-Principal before finally selecting his classes or paying his fees at the Secretary's office.

4.—Students on admission are required to sign a declaration that they will observe the Ordinances of the University and conform to such regulations as have been or may be made for the maintenance of order in the University and in the classes they attend.

5.—The Vice-Principal will be present every day (except Saturday) during the week commencing September 23rd, from ten o'clock a.m. to one o'clock p.m. to confer with intending students, and give them advice respecting their courses of study, and may be seen at other times by appointment. The Deans of the Faculties and the Professors will also be present on Friday, September 27th, for the same purpose.

6.—Application for admission to classes must be made either in writing or personally to the Secretary of the University. The Secretary's office is open from 9 to 1 and from 2 to 5, except on Saturdays, when it is open from 9 to 1 only.

7.—*Reports on the attendance, progress, and conduct of students will be sent to parents and guardians at the end of each term on application in writing to the Vice-Principal.*

8.—Students intending to take lodgings in Birmingham or the vicinity are recommended to place themselves in communication with the Secretary.

9.—Every student residing in lodgings in Birmingham is required to leave his local address at the Secretary's office, and notify the Secretary of any change in his address.

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## FEES.

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All Fees are to be paid in advance (*i.e.*, at the beginning of the Session or term on account of which they are due) at the Secretary's office in the University. Cheques should be drawn in favour of Mr. Geo. H. Morley. *Students should not enter for classes until after mature consideration, as fees once paid cannot be returned.*

### I.—MEMBERSHIP FEE.

Every student is required to pay a Membership Fee, which includes all charges for Registration, and for the use of the Library and Common Rooms.

The following statement shows the Membership Fees for a Session or a Term :—

	Session.	Term.
Students attending not more than three hours per week	£ s. d.	£ s. d.
... ... 0 10 6	... 0 5 0	
All other Students	... ... 1 1 0	... 0 10 6

### II.—FEES FOR CLASSES AND LABORATORIES.

As the courses prescribed during the different years of study in most cases allow students to choose alternative subjects, it is not practicable to give a tabular statement

of the fees for every combination of subjects. The fees charged for the different courses of study in each subject are appended to the Syllabuses of the Courses. *These fees are all subject to revision from year to year.*

The following table shows the present cost of the various courses for degrees :—

(a) Courses for B.Sc. degree in Pure Science :

First year, from 15½ to 23½ guineas.

Second year, from 12 to 25½ guineas.

Third year, from 12 to 26½ guineas.

(b) Courses for B.Sc. degree in Engineering :

Composition fees (including membership fee) :

First year, £34.

Second year, £50

Third year, £50.

Fourth year (Mechanical and Civil), £50.

Fourth year (Electrical), £55.

(c) Courses for B.Sc. degree in Metallurgy.

Composition fees (including membership fee) :

First year, £30.

Second year, £35.

Third year (Metallurgists), £40.

Third year (Metallurgical Chemists), £30.

(d) Courses for B.Sc. degree in Mining.

Composition fees (including membership fee) :

First year, £30.

Second year, £35.

Third year, £50.

(e) Courses for B.A. degree :

First year, 18½ guineas.

Second year, 15½ guineas.

Third year, 15½ guineas.

(f) Courses for B.Com. degree :

Composition fees (including membership fee) :

First year, 20 guineas.

Second year, 23 guineas.

Third year, 23 guineas.

## III.—FEES FOR EXAMINATION

	Faculty of Science.	£ s. d.
(i.)	Intermediate Examination ...	... 2 0 0
(ii.)	Final B.Sc. Examination—	
	Subsidiary Subjects ...	... 2 0 0
	Principal Subjects ...	... 2 0 0
(iii.)	First Engineering Examination	... 2 0 0
(iv.)	First Mining Examination	... 2 0 0
(v.)	First Metallurgy Examination	... 2 0 0
(vi.)	Second Engineering Examination	... 2 0 0
(vii.)	Second Mining Examination	... 2 0 0
(viii.)	Second Metallurgy Examination	... 2 0 0
(ix.)	Third Engineering Examination	... 2 0 0
(x.)	Third Mining Examination	... 2 0 0
(xi.)	Third Metallurgy Examination	... 2 0 0
(xii.)	Fourth Engineering Examination	... 2 0 0
(xiii.)	Master's Degree Examination	... 2 0 0
(xiv.)	Doctor's Degree Examination	... 2 0 0
(xv.)	Brewing Diploma Examination	... 2 0 0

## Faculty of Arts.

(i.)	Intermediate Examination	... 2 0 0
(ii.)	Second Arts Examination	... 2 0 0
(iii.)	Final B.A. Examination	... 2 0 0
(iv.)	M.A. Examination	... 2 0 0
(v.)	D.Phil. or D.Litt. Examination	... 2 0 0
(vi.)	Secondary Teacher's Diploma Examination	... 2 0 0

## Faculty of Commerce.

First Commerce Examination	... 2 0 0
Second Commerce Examination	... 2 0 0
Final B.Com. Examination	... 2 0 0

The fees for Examination cannot be returned.

Candidates are allowed to repeat any examination on payment of half the usual fee. The fee for re-examination in separate subjects is 10s. per subject.

## IV.—FEES ON ADMISSION TO DEGREES.

		£	s.	d.
(i.)	B.Sc. Degree	2	0	0
(ii.)	B.A. Degree	2	0	0
(iii.)	B.Com. Degree	2	0	0
(iv.)	M.Sc. Degree	3	0	0
(v.)	M.A. Degree	3	0	0
(vi.)	D.Sc. Degree	8	0	0
(vii.)	D.Phil. or D.Litt. Degree	8	0	0

*These fees must be paid at the same time as the fee for the Final Examinations for the Degrees.*

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### REGULATIONS TO BE OBSERVED BY ALL STUDENTS.

1.—Students are not permitted to be in the University buildings before 8.45 a.m., nor after 6 p.m., unless attending classes or the meetings of some Society of the University.

2.—All students are required to conduct themselves in a quiet and orderly manner whilst in the University, not only during lecture hours, but on entering and leaving the building.

3.—Smoking is prohibited in the corridors and front hall of the University buildings, and is restricted to the students' common rooms.

4.—Card playing is prohibited in all parts of the buildings.

5.—Students committing any damage to the University building, or University property, will be required to pay for making good the same, and may be excluded from the University till payment is made.

6.—Students are required to attend punctually and regularly at the lectures and classes for which their names are entered.

7.—When a student has been absent it is desirable that he should report the cause of his absence to the Professor on his return to the class. In the event of illness or unavoidable absence notice should be sent by the absentee to the Dean of his Faculty as soon as convenient.

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### LIBRARY REGULATIONS.

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1.—The Library is open daily during the Session from 9 a.m. to 6 p.m., except on Saturdays, when it is closed at 1 p.m. It is closed at 5 p.m. during the vacations. It is also closed during the month of August for cleaning purposes.

2.—The Library being set apart expressly for study, *all conversation is strictly prohibited*. Students are required to sit at the tables, and are not permitted to stand about in any part of the Library.

3.—Students are permitted to take books from the shelves, but they are to be *returned to the Librarian*, and are not to be replaced upon the shelves by the readers.

4.—The Library is to be used by *present students, for reference and study only*, and no books, pamphlets, or journals, etc., are to be taken from it, except by members of the Teaching Staff.

5.—Certain valuable books of reference (including Dictionaries and Encyclopædias), as indicated by the Council, are not allowed to be taken from the Library. Current Journals, Transactions of Societies, etc., are not allowed to be taken from the Library until after the publication of a succeeding part.

6.—In the event of a book being damaged by scribbling, tearing, etc., the person damaging it will be required to supply another copy in its place to the satisfaction of the Council. Any defect in a printed book should be pointed out to the Librarian.

7.—Books borrowed from the Library must be returned to the Librarian before the expiration of 15 days, subject to a renewal for a further period of 15 days, unless required by another reader.

8.—All books, pamphlets, etc., in the hands of borrowers must be returned to the Librarian on or before the last day of the Session.

9.—The Librarian is authorised to exclude temporarily any person infringing the regulations of the Library.

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### LOCKERS FOR BOOKS, &c.

Lockers are provided in the locker room (first floor), and in the hat and coat room of the Medical School, to enable students to preserve their books and papers in safety, at a charge of one shilling per Term, or two shillings and sixpence per Session. Each student will be supplied with a key, upon which a deposit of one shilling will be charged. The key must be delivered up on or before the last day of the Term or Session for which payment has been made, or the deposit will be forfeited.

A master-key of all the lockers is kept in the office.

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### UNIVERSITY CLUB.

*President : THE VICE-CHANCELLOR.*

*Chairman of Committee : Professor A. W. KIRKALDY.*

*Hon. Secretary : C. W. MILLIGAN, B.A.*

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The accommodation consists of a reading and debating room, which can also be used for meetings, dances, and other social purposes; writing room, and dining room, where meals and refreshments at popular prices are procurable throughout the day. There is also a games

room, and a billiard room fitted with two tables. A bath room, dressing rooms, and cycle accommodation are also provided.

All members of the University Court of Governors and Council, all Professors, Lecturers and Demonstrators of the University all present and past students of the University and Medical School, and all members of the Honorary and Resident Staffs of the Hospitals in connection with the University, are eligible as members. Entrance fee half-a-guinea.

Annual subscription one and a half guineas.

Full particulars as to membership, and copies of the rules, can be obtained from the Hon. Secretary.

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## MATRICULATION REGULATIONS.

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Matriculation is the formal admission of a student to membership of the University.

Although the classes in the University are open to all students who may wish to join them, students are strongly recommended to pass some qualifying examination and be matriculated before entering the University. It is only matriculated students who can become undergraduates and enjoy the privileges of Membership of the University and the Guild of Undergraduates and are eligible to become candidates for degrees in the University. Undergraduates and Graduate Students are required to wear academic dress when in attendance upon University lectures and examinations, when calling upon the officers of the University, and upon all official occasions. Students who are not Undergraduates or Graduates are not entitled to wear academic dress.

Students who have been matriculated are entitled to the privileges of membership of the University and of the Guild of Undergraduates only so long as they are in actual attendance on a course of study approved by a Faculty of the University.

Students may be matriculated in any Faculty provided that they have passed the Matriculation Examination or have obtained the Senior School Certificate of the University in the necessary subjects, or can produce evidence that they have passed one of the Examinations which the University accepts as exempting from the Matriculation Examination. A schedule of such examinations is appended. Persons desiring to be matriculated by virtue of such an examination are required to pay a fee of £1.

Candidates may also be Matriculated after passing the Intermediate Examination in Science or Arts, or the

First Engineering Examination, or the First Metallurgy Examination, instead of the Matriculation Examination, provided that they also pass in such of the required subjects of the Matriculation Examination as are not included in these Examinations. The Examination in these additional subjects may be taken either at the July or September Matriculation Examination. Such candidates may then enter upon the second year's course of study in the Faculties of Science and Arts, and take the examination for the Bachelor's Degree at the end of their second year; but they will still be required to complete three years of study before being admitted to any Degree. Those candidates who pass the Final Examination for the Bachelor's Degree at the end of their second year may take the course for the Master's Degree in their third year, and be eligible for that Degree at the end of three years from entrance.

Candidates who pass the Intermediate Science Examination or the First Engineering Examination before entrance become eligible for the B.Sc. Degree in Engineering after three years instead of four.

Candidates who pass the Intermediate Arts Examination before entrance may proceed at once to the courses for the School of Modern Languages or other specialised courses, and at the end of their third year of study will be eligible for the degree of Master of Arts.

Candidates for degrees in the Faculty of Medicine may enter for the first professional examination (Chemistry Physics and Elementary Biology) before commencing their courses in the University, provided that they have already passed the Matriculation Examination or some preliminary examination accepted by the University in lieu of its Matriculation Examination. Such candidates will become eligible for the Final Examination for the Degrees of M.B., Ch.B., after four years of study in the University, provided that they have then been registered medical students for a period of five years.

The Intermediate Science Examination of any approved University will be accepted in lieu of the Intermediate Science or First Engineering Examination of this University, and the Intermediate Arts and Preliminary Scientific Examinations of other approved universities will be accepted as equivalent to the corresponding examinations of this University, as qualifying students to enter on second year courses of study and entitling them to the foregoing privileges.

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### MATRICULATION EXAMINATION.

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There will be Matriculation Examinations, commencing on Monday, July 13th, and Monday, September 14th, 1908. Candidates for these examinations must apply to the Registrar for a form of entry, which must be returned on or before June 15th or August 10th respectively, accompanied by a certificate of good character from the last school attended or from some responsible person, and by the proper fee.

The University will be prepared to hold another Matriculation Examination in June, 1908, if a sufficient number of candidates notify their desire for such an examination not later than the first Monday in April, 1908.

The Fee for the Matriculation Examination is £2 ; and, in cases of failure or withdrawal from the examination, for each subsequent Examination £1.

The examination will be conducted partly by means of printed papers, and partly by means of a *viva voce* examination.

Copies of the examination papers set at previous examinations may be obtained from Messrs. Cornish Bros., New Street, Birmingham, price sixpence.

Every candidate must pass in *five* subjects at one examination, viz. :—

- (1) English History and Literature.
- (2) Mathematics.
- (3), (4), and (5) Three subjects (of which one must be a language) chosen from the following list :—
  - (a) Latin.
  - (b) Greek.
  - (c) French.
  - (d) German.
  - (e) Italian.
  - (f) Spanish.
  - (g) Higher Mathematics.
  - (h) Experimental Mechanics
  - (i) Chemistry.
  - (j) Geography.
  - (k) Botany.
  - (l) Animal Biology
  - (m) Geometrical Drawing.

Candidates for Degrees in Science and Commerce are allowed free choice of subjects under the headings (3), (4), and (5), except that one of the subjects must be a language.

In certain cases foreign students are allowed to offer their native language instead of the prescribed English. Such candidates should give notice to the Registrar before April 20th for the June examination, and before June 16th for the September examination.

Candidates for Degrees in Engineering are required to take Experimental Mechanics as one of their subjects, and are further recommended to take Higher Mathematics. If these two subjects are taken, a Special Engineering Matriculation Certificate will be awarded, which is

accepted by the Institution of Civil Engineers as exempting from their Students Preliminary Examination.

Candidates for Degrees in Arts are required to take Latin and a modern language as two of their subjects.

Candidates for Degrees in Medicine are required to take Latin, another language, and either Experimental Mechanics or Chemistry as three of their subjects.

Candidates may offer six subjects for examination if they choose, but they will receive credit for only five. Candidates who have passed the examination in five subjects, but have not satisfied the special requirements for degrees in Engineering, Arts or Medicine, may qualify for entry to the courses for these degrees by passing separately at a subsequent examination in the subject or subjects omitted. The fee for examination in one subject is 10s.

The particulars of the foregoing subjects of examination in July and September, 1908, are set out in the following schedule. The books to be prepared in Latin, Greek, French, German, Italian, and Spanish are left to the choice of candidates, subject to the approval of the University, but they should be of about the same length and standard of difficulty as the books suggested under the various headings below.

## 1. English History and Literature.

### A. History of the English People from 1066.

It is desired that students should give attention to the social and literary, as well as to the political and geographical aspects of history. The main line of treatment expected may be gathered from J. R. Green's "Short History of the English People." In general eighteen or twenty questions will be set, of which candidates will be expected to answer not more than seven or eight.

- B. English composition : Candidates will be required to write three or four short compositions on subjects drawn from *one* of the following groups, to be selected by the Candidate.

Groups for 1908 :

- (a) Shakespeare : Merchant of Venice, King John, Tempest.  
Dryden : Absalom and Achitophel (Part I.)  
Goldsmith : Deserted Village and Vicar of Wakefield.
- (b) Pope's Rape of the Lock ;  
Addison's Sir Roger de Coverley Papers ;  
Macaulay's Essay on Addison ;  
Thackeray's English Humorists ;  
Dr. Johnson's London and Vanity of Human Wishes ;  
Gray's Elegy, Progress of Poesy, The Bard and Ode to Adversity.
- (c) Wordsworth's Laodamia, Ode to Duty, Michael, Song at the Feast of Brougham Castle, Tintern Abbey, Resolution and Independence, Preface to the Lyrical Ballads ;  
Coleridge's Ancient Mariner ;  
Byron's Prisoner of Chillon and the third Canto of Childe Harold ;  
Scott's Ivanhoe ;  
Southey's Life of Nelson.
- (d) Tennyson's Enone, Ulysses, Palace of Art, Dream of Fair Women, Lotos Eaters, Tithonus, Ode on the Death of the Duke of Wellington ;  
Matthew Arnold's Scholar Gipsy, Thyrsis, Sohrab and Rustum ;  
Lamb's Essays of Elia (first series), Lowell's Essays on Chaucer, Spenser and Dryden.

Groups for 1909 :

- (a) Spenser : *Faerie Queen*, Book I. ;  
 Shakespeare : *Macbeth* ;  
*Lamb's Tales from Shakespeare* ;  
*Kingsley's Westward Ho!*  
 Milton : *Paradise Lost*, Books I. and II.

The groups *b*, *c*, *d* remain the same as for 1908.

Candidates will be expected to show an intelligent understanding of the subject matter of the books they offer, but not a minute knowledge of allusions, parallel passages and criticisms which bear on the text of the books.

## 2. Mathematics.

1. *Arithmetic*.—A knowledge of recurring decimals and of the process of extracting cube root will not be required.

The use of algebraical symbols and processes will be permitted.

2. *Elementary Algebra*, viz., addition, subtraction, multiplication and division ; simple equations ; fractions; highest common factor, lowest common multiple ; quadratic equations ; solutions of two simultaneous equations, one at least being linear ; simple graphs ; problems requiring the classes of equations specified ; simple questions on fractional indices ; the nature and simple properties of logarithms to the base 10, with easy applications of four-figure tables ; ratio and proportion ; arithmetic progression, finite geometric progressions.

3. *Geometry*.—The paper in Geometry will contain questions on Practical and on Theoretical Geometry. Every candidate will be expected to answer questions in both branches of the subject.

The questions on Practical Geometry will be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate must provide himself with a ruler graduated in inches and tenths of an inch, and in centimetres and millimetres, a set square, a protractor, compasses, and a hard pencil. All figures should be drawn accurately. Questions may be set in which the use of the set square or of the protractor is forbidden.

The questions on Theoretical Geometry will consist of theorems contained in the annexed Schedule B, together with questions upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a Proposition will be accepted which appears to the Examiners to form part of a systematic treatment of the subject ; the order in which the theorems are stated in Schedule B is not imposed as the sequence of their treatment.

In the proof of theorems and deductions from them, the use of hypothetical constructions will be permitted. Proofs which are only applicable to commensurable magnitudes will be accepted.

#### SCHEDULE A.

Bisection of angles and of straight lines. Construction of perpendiculars to straight lines. Construction of an angle equal to a given angle. Construction of parallels to a given straight line. Simple cases of the construction from sufficient data of triangles and quadrilaterals. Division of straight lines into a given number of equal parts or into parts in any given proportions. Construction of a triangle equal in area to a given polygon. Construction of tangents to a circle and of common tangents to two circles. Simple cases of the construction

of circles from sufficient data. Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines. Construction of regular figures of 3, 4, 6 or 8 sides in or about a given circle. Construction of a square equal in area to a given polygon.

#### SCHEDULE B.

*Angles at a Point.*—If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles ; and the converse. If two straight lines intersect, the vertically opposite angles are equal.

*Parallel Straight Lines.*—When a straight line cuts two other straight lines, if (i) a pair of alternate angles are equal, or (ii) a pair of corresponding angles are equal, or (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles. then the two straight lines are parallel ; and the converse. Straight lines which are parallel to the same straight line are parallel to one another.

*Triangles and Rectilinear Figures.*—The sum of the angles of a triangle is equal to two right angles. If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles. If two triangles have two sides of the one equal to two sides of the other, respectively, and also the angles contained by those sides equal, the triangles are congruent. If two triangles have two angles of the one equal to two angles of the other, respectively, and also one side of the one equal to the corresponding side of the other, the triangles are congruent. If two sides of a triangle are equal, the angles opposite to these sides are equal ; and the converse. If two triangles have the three sides

of the one equal to the three sides of the other, respectively, the triangles are congruent. If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent. If two sides of a triangle are unequal, the greater side has the greater angle opposite to it ; and the converse. Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest. The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect one another. If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

*Areas.*—Parallelograms on the same or equal bases and of the same altitude are equal in area. Triangles on the same or equal bases and of the same altitude are equal in area. Equal triangles on the same or equal bases are of the same altitude. Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities :—

$$\begin{aligned} k(a+b+c+\dots) &= ka+kb+kc+\dots, \\ (a+b)^2 &= a^2+2ab+b^2, \\ (a-b)^2 &= a^2-2ab+b^2, \\ a^2-b^2 &= (a+b)(a-b). \end{aligned}$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right or acute. The difference in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

*Loci.*—The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points. The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angle between the two given lines.

*The Circle.*—A straight line, drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord ; conversely, the perpendicular to a chord from the centre bisects the chord. There is one circle, and one only, which passes through three given points not in a straight line. In equal circles (or in the same circle) (i) if two arcs subtend equal angles at the centres, they are equal ; (ii) conversely, if two arcs are equal, they subtend equal angles at the centres. In equal circles (or in the same circle) (i) if two chords are equal, they cut off equal arcs ; (ii) conversely, if two arcs are equal, the chords of the arcs are equal. Equal chords of a circle are equidistant from the centre ; and the converse. The tangent at any point of a circle and the radius through the point are perpendicular to one another. If two circles touch, the point of contact lies on the straight line through the centres. The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference. Angles in the same segment of a circle are equal ; and, if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle. The angle in a semicircle is a right angle ; the angle in a segment greater than a semicircle is less than a right angle ; and the angle in a segment less than a semicircle is

greater than a right angle. The opposite angles of any quadrilateral inscribed in a circle are supplementary ; and the converse. If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments. If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

*Proportion and Similar Triangles.*—If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally ; and the converse. If two triangles are equiangular, their corresponding sides are proportional ; and the converse. If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional the triangles are similar. The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle, and likewise the external bisector externally. The ratio of the areas of similar triangles is equal to the ratio of the squares on corresponding sides.

### 3, 4, and 5. (a) and (b) Latin and Greek.

- (i.) Translation of easy passages at sight, with questions on Grammar (Accidence and Syntax).
- (ii.) Easy Composition.

For prepared work any book of about the same length and standard of difficulty as, Cicero, *Pro Lege Manilia*. (about 70 sections), or one of the longer books of Cæsar (*e.g.*, Bell. Gall. I., V., VI., VII.), or two of the shorter books of the Gallic War (II., III., IV.), or a book of Vergil

or Ovid (about 700-800 lines), and (for Greek) a book of Xenophon or a Greek play will be accepted.

Candidates proposing to offer other books than these must submit them for approval to the University.

(c) French.

- (i.) Translation of easy passages at sight, with questions on Grammar (Accidence and elementary Syntax).
- (ii.) Easy Composition and Dictation.
- (iii.) A *viva voce* examination on the prepared book, including the reading aloud and translation of selected passages, and easy conversation based on them.

For prepared work the following book (or any other book of similar length and standard of difficulty approved beforehand by the University) may be offered in July and September, 1908 :—

Jules Verne, *Le Tour du Monde en quatre-vingts jours* (Siepmann's series), Macmillan.

(d) German.

- (i.) Translation of easy passages at sight, with questions on Grammar (Accidence and elementary Syntax).
- (ii.) Easy Composition and Dictation.
- (iii.) *Viva voce.* Reading aloud and translation of passages from the prepared book, and easy conversation based on them.

For prepared work one of the following books (or any other book of similar length and standard of difficulty approved beforehand by the University) may be offered in July and September, 1908 :—

Riehl, *Die vierzehn Nothelfer* (Swan, Sonnenschein).

Fischer, *Die wandelnde Glocke* (Rivington).

## (e) Italian.

- (i.) Translation of easy passages at sight, with questions on Grammar (Accidence and elementary Syntax).
- (ii.) Easy Composition and Dictation.
- (iii.) *Viva voce.* Reading aloud and translation of passages from the prepared book, and easy conversation based on them.

For prepared work one of the following books (or any other book of similar length and standard of difficulty approved beforehand by the University) may be offered in July and September, 1908 :—

Bersezio, *Il Cane del Cieco* (Richter, Davos).

Pellico, *Le Mie Prigioni*.

## (f) Spanish.

- (i.) Translation of easy passages at sight, with questions on Grammar (Accidence and elementary Syntax).
- (ii.) Easy Composition and Dictation.
- (iii.) *Viva voce.* Reading aloud and translation of passages from the prepared book, and easy conversation based on them.

For prepared work the following book (or any other book of similar length and standard of difficulty approved beforehand by the University) may be offered in July and September, 1908 :—

Cervantes, *The Adventure of the Wooden Horse and Sancho Panza, Governor of Barataria* (Clarendon Press).

## (g) Higher Mathematics.

*Algebra*.—Elementary properties of surds and imaginaries; simultaneous quadratics and equations like quadratics; arithmetical and geometrical progressions and other simple series; theory of indices; theory and practical applications of logarithms; permutations and combinations; the binomial theorem for a positive integral exponent.

*Trigonometry*.—Trigonometrical ratios of acute angles; solution of right-angled triangles, and simple problems of heights and distances; circular measure of angles; length of arcs of circles; angles of any magnitude and sign; trigonometrical ratios of obtuse angles; sine, cosine, and tangent of the sum and difference of angles; formulæ for the ratios of the double angle, triple angle, and the half angle; transformation of sums and differences of sines and cosines into products, and vice-versâ; properties of triangles; solution of triangles; problems on heights and distances; the chief circles related to a triangle; regular polygons; areas of circles, sectors, and segments.

*Elementary Analytical Geometry*.—Rectangular co-ordinates; distance between two points; areas of triangles and polygons; the equation of the line joining two given points; intersection of lines and other loci; the equation to the circle.

*Geometry*.—The substance of Euclid, Book XI., 1—21, together with properties, areas of surface, and volumes of polyhedra, cylinders, cones, and spheres.

## (h) Experimental Mechanics.

*Statics*. Force measured in pounds weight or grammes weight. Equilibrium under two equal and opposite forces. Equality of the action and reaction between two bodies. Transmissi-

bility of force by strings, ropes, and rigid connexions. Experimental investigation of the conditions for the equilibrium of a body when acted on by three parallel forces. Resultant. Moment of a force about a point. Balancing of moments when a body is in equilibrium. Centre of parallel forces. Centre of gravity and the experimental investigation of its positions. Stability and instability of a body, supported from a point or on a base. Work and rate of working. Foot pound and horse power. The lever, the balance, the single string system of pulleys, the wheel and axle, the differential pulley, as illustrations of parallel forces, and of the principle of work. Experimental investigation of the conditions for the equilibrium of a body when acted on by three forces not parallel. The triangle of forces. The parallelogram of forces. Graphic resolution and composition of forces. Simple cases of resultant of two forces acting at a point. Balancing of moments when a body is in equilibrium. Inclined plane. Windmill. Sailing. Screw, toothed and worm wheels, as treated by the principle of work. Efficiency of machines always reduced by friction.

*Hydrostatics.* Distinction between liquids and gases. Pressure at a point in a fluid. Equality of pressure at points on the same level. Change of pressure with depth. Surface of a liquid level. Transmission of pressure in liquid. Hydraulic press. Pressure against horizontal surfaces and vertical containing walls. Archimedes' principle. Density and specific gravity. Methods of finding specific gravities. Relation between volume and pressure in a gas. Air Pumps. Atmospheric pressure. Barometers. Common pumps. Force pump.

*Dynamics.* Units of length and time. Velocity. Uniform acceleration. Use of formulæ connecting velocity, time and distance travelled, with acceleration. Mass. Equal masses are those having equal acceleration under equal forces. Simple experiments to show that mass is proportional to weight at the same place. Constancy of mass under change of physical and chemical condition. Momentum and rate of change of momentum. Force measured by rate of change of momentum. Dyne and poundal. Momentum measure of force proportional to its weight measure. Relation between weight measure and momentum measure  $g$ . Atwood's machine. Momenta generated in two bodies by their mutual action, equal and opposite. Constancy of momentum. Kinetic energy and Work.

(i) Chemistry.

Gaseous, liquid and solid states of matter.

Nature of chemical change. Elements, compounds,  
and mixtures.

Types of chemical action.

Solution, crystallisation, distillation, diffusion.

Chemical and physical properties of air and water.

Nature of acids, bases and salts.

Nature, occurrence, chief modes of preparation, and principal properties of the following non-metallic elements and their more important compounds : Hydrogen, Oxygen, Carbon, Silicon, Sulphur, Nitrogen, Phosphorus, Fluorine, Chlorine, Bromine, and Iodine.

Combination by weight and volume. Symbols, equations and calculations relating to weight and volume. Nomenclature.

Chemical and Physical characteristics of metals as illustrated by Sodium, Calcium, Iron, Zinc, Lead, Mercury, Copper and Silver.

Candidates are required to show knowledge of a concrete and experimental character throughout.

(ii) Geography.

PART I.—PHYSICAL.

The Earth and the Solar System ; the form and size of the globe ; its movements ; day and night ; the seasons.

The Earth's surface ; distribution of land and water ; the relief of the land areas and floor of oceans.

The Atmosphere ; its composition and temperature, moisture, pressure, and movements (winds, storms, rain, snow, fog, etc., and their distribution).

The Sea ; the sea waters, waves, and currents ; the chief deposits on the ocean floor.

The Land ; the solid earth crust and its rocks ; its slow movements ; earthquakes and volcanoes, their phenomena and distribution.

The Work of Water, etc. ; the sea and its waves ; rain and rivers ; river basins ; glaciers and ice-sheets ; lakes, springs, waterfalls, deltas, &c.

PART II.—POLITICAL AND PRACTICAL.

A. General.

The Continents ; generalities of their natural features, climate and productions ; their chief countries, peoples, modes of government, capitals, and other main centres of population.

*B. Special.*

The British Isles ; their natural features, climate, and productions ; their main political divisions, chief towns, population, industries, trade and commerce, colonies and dependencies.

*C. Practical.*

The reading of ordinary topographical maps on the scales of 1 inch and 2 inches to the mile ; the measurement of distances and directions on maps generally ; interpretation of the modes of shewing natural features (relief and drainage), and artificial features (roads, railways, etc.)

## NOTE.

Candidates will be required to satisfy the Examiners both in Part I. and in Part II. A large number of questions will be set, but Candidates will be expected to answer only about one-third of them.

## (k) Botany.

*A. Plant Form as a key to Relationships.*

The Candidate is expected to have *practical* familiarity with

(i.) The chief characters of root, stem, bud, and leaf of the principal British plants of quite general distribution and of garden plants of general cultivation, and with the nature and structure, as determinable by eye or lens, of common bulbs, fruits, seeds, or other vegetable products, in ordinary use, and universally met with in shop or market.

(ii.) The most important floral and fruiting characters of the following British Natural Orders :—Ranunculaceae, Cruciferae, Violaceae, Caryophyl-

laceae, Leguminosae, Rosaceae, Umbelliferae, Compositae, Primulaceae, Scrophularineæ, Labiateæ, Cupuliferae, Liliaceæ.

- (iii.) To be able to describe concisely and in systematic fashion, flowering or fruiting specimens taken from (i) or (ii) as above, the various parts being known by their technical names, but otherwise more importance being attached to accuracy of observation than to the memory of technical terms.

### *B. How Plants live, grow, and reproduce.*

- (iv.) The mode of development of the plant, the elementary facts of nutrition and respiration, the nature and function of root, stem and leaf, and their relations with external conditions and forces, to be determined *experimentally* by the aid of seedlings grown in the class-room from the following typical seeds or one-seeded fruits, viz., castor-oil *or* buck wheat, pea *or* bean, sunflower, mustard *or* cress, and maize, wheat *or* barley, and the bulb of hyacinth *or* onion.
- (v) The functions of the floral parts, their relations with pollination, the production and protection of seeds, and the provisions for seed-dispersal, especially as illustrated in the Natural Orders named above.

### (l) Animal Biology.

- (i.) Distinctive properties of living matter or protoplasm, as illustrated by the structure and mode of life of the Proteus-animalcule or *Amœba*. Differences between Animals and Plants. The nature of the Cell.

- (ii). The general structure of the Frog. Elementary physiology of the Frog. The organs of digestion and their use. The nature of blood. The structure of the heart, and the arrangement of the more important blood vessels. The use of a circulatory system. The nature of excretory organs. Mode of breathing. The kidneys and their use.
- (iii.) The more important facts in the structure and habits of the freshwater Polype (*Hydra*) ; the Earthworm (*Lumbricus*) ; and, the Crayfish (*Astacus*).
- (iv.) Methods of reproduction in animals. The egg-cell and the sperm-cell. Fertilisation of the egg. Segmentation of the fertilized egg. The metamorphosis of the Frog, treated in an elementary fashion.

*(m) Geometrical Drawing.*

*Plane Geometry.* Construction of Scales. Areas of plane figures. Problems on construction and simple properties of polygons, and the following curves : circle, ellipse, parabola, hyperbola, cycloid, and involute of circle. Determination of mass centre of a polygon. Simple problems on loci, including point-paths in elementary link-work. The representation and solution of algebraic equations by curves.

*Solid Geometry.* Elementary projections of points lines, planes, and solids, including the cylinder, cone, and sphere. Simple sections. Projection of additional plans and elevations. Developments of the surfaces of simple solids. Elementary problems in inter-penetration of prisms, cylinders and cones, and developments of penetrated surfaces. Projection of helical surfaces and screw threads.

A list of candidates who have passed the Examination will be published, arranged in two divisions, in each of which the names will be placed in alphabetical order.

A pass-certificate signed by the Registrar will be given to each successful candidate after the list is published.

Unsuccessful candidates will be informed of the subjects in which they have failed on application to the Registrar after the publication of the list.

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### SCHEDULE OF EXAMINATIONS

*accepted in lieu of Matriculation Examination.*

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1. The Previous Examination of the University of Cambridge, if it includes the "Additional Subjects."
2. Responses of the University of Oxford, except in mathematics.
3. The Preliminary or Matriculation Examination of a recognised University.
4. The Higher Certificate of the Oxford and Cambridge Examinations Board.
5. The Oxford or Cambridge Senior Local Examination.

Provided that Candidates who offer Examinations 3, 4 and 5 have passed at one examination in all the subjects required by the regulations for matriculation.

In the Faculties of Science, Arts and Commerce the Oxford and Cambridge Higher Local Examinations in any subject will exempt candidates from further examination in that subject in the Matriculation Examination. A written statement from the Secretary of the Oxford Delegacy or the Cambridge Syndicate certifying that the candidate has passed the examination in that subject must be presented.

## RECOGNITION OF THE MATRICULATION EXAMINATION BY OTHER INSTITUTIONS.

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The Matriculation Examination of the University of Birmingham is recognised by the following Institutions in lieu of the preliminary examination :—

Incorporated Law Society (provided that Latin is one of the subjects of examination).

Institute of Chartered Accountants (provided that the Matriculation Certificate includes all the subjects required for the Institute's Preliminary Examination).

Board of Education, for admission to Training Colleges.

General Medical Council, for Registration of Medical and Dental Students.

Institute of Chemistry.

The Engineering Matriculation Certificate is accepted by the Institution of Civil Engineers as exempting from their Studentship Examination.

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## SCHOOL CERTIFICATES.

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The conditions under which the University conducts the Inspection of Secondary Schools will be found on page 182.. In Schools which come under this scheme the University is prepared to award Senior and Junior School Certificates under the following conditions :

1. Senior School Certificates will be awarded to candidates who

(a) have pursued an approved course of study for a continuous period of three years in one school, or of four years in two schools which are under the

University's inspection ; (b) have attained a standard of education fully equal to that of the University Matriculation Examination in an adequate range of subjects.

The Certificate shall enumerate the subjects in which the necessary standard has been reached.

2. Holders of the Senior School Certificates will be exempted from the Matriculation Examination of the University in the cases where the subjects enumerated on the Certificate include all the subjects demanded by the Faculty which they propose to enter.

3. Junior School Certificates will be awarded to candidates who

(a) have pursued an approved course of study for a continuous period of three years in a school or schools which are under the University's inspection ;

(b) have attained such a standard as may reasonably be expected of a boy or girl of 15.

The Certificate shall enumerate the subjects in which the necessary standard has been reached.

4. The Certificates shall be awarded by the University upon the results of school examinations held by the inspectors of the University ; and the school record kept for each pupil throughout his period of attendance shall be available for inspection and consideration by the inspectors and examiners.

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The Senior School Certificate is recognised by the following Institutions as exempting from their preliminary examinations :—

Royal Institute of British Architects.

General Medical Council, for Registration of Medical and Dental Students (if the necessary subjects be taken).

Institute of Chartered Accountants (provided that the Certificate includes all the subjects required for the Institute's Preliminary Examination).

Institute of Chemistry.

Incorporated Law Society (if Latin is taken).

Institution of Civil Engineers (if required subjects are taken).

Board of Education, for admission to Training Colleges.

The Senior School Certificate is also one of the "Leaving Certificates" recognised by the War Office in its revised regulations for admission to Sandhurst and Woolwich.

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### DEGREES.

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The University confers the degrees of Bachelor of Science (B.Sc.), Master of Science (M.Sc.), and Doctor of Science (D.Sc.), in the Faculty of Science, the degrees of Bachelor of Arts (B.A.), Master of Arts (M.A.), Doctor of Letters (D.Litt.), and Doctor of Philosophy (D.Phil.), in the Faculty of Arts; and Bachelor of Commerce (B.Com.), and Master of Commerce (M.Com.) in the Faculty of Commerce.

Degrees are conferred at a special Congregation of members of the University held for the purpose at least once a year. The formal admission to degrees is made by the Chancellor, or, in his absence, by the Vice-Chancellor. No candidate is entitled to the use of a degree or to any of the privileges of a graduate until he has been admitted to the degree by the Chancellor or his deputy, and has signed the Register of Graduates.

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## REGULATIONS FOR DEGREES IN THE FACULTIES OF SCIENCE AND ARTS.

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No undergraduate can obtain a degree without attendance upon certain prescribed courses of study in the University, extending over a period of at least three sessions after matriculation; and no attendance upon lectures in the University prior to matriculation will be accepted as any part of the qualification necessary for a degree without special leave from the Senate. The work of candidates is estimated (1) by means of periodical exercises, class examinations, and inspection of laboratory note-books throughout the session, and (2) by means of examinations at the end of the session, and the same total of marks is assigned to each of these two portions of the student's work. In ordinary cases students must attain the standard of a pass both in term work and in the sessional examination, but some weakness in the final examination may be counterbalanced by special excellence in term work. At the end of each session every undergraduate is required to present a certificate of qualification, stating that he has attended to the satisfaction of the Professors concerned not less than two-thirds of the lectures, laboratory and exercise classes, and that he has passed such class examinations and performed such other exercises as his teachers may prescribe in connexion with their own courses, to the satisfaction of the Faculty, before being admitted to the University examination. If a student is prevented by illness from attending any of the terminal Examinations, a medical certificate must be sent to the Dean of the Faculty.

### B.Sc. DEGREE IN PURE SCIENCE.

Candidates for the Bachelor's Degree in Pure Science are required to have spent at least three sessions in attendance on courses of study in the University after

matriculation in the Faculty and to pass two University Examinations, the *Intermediate* and the *Final*, in addition to the class examinations held by the Professors in connexion with the courses of study. But if the candidates before entrance to the University have passed the Intermediate Examination (or an examination recognised by the University as equivalent to that examination), they will be allowed to sit for the Final Examination after two years of study ; but in no case will the degree be conferred on such candidates until they have completed a further year of study, after which they become eligible for the degree of Master of Science. Candidates are further required to pass an examination in French and German, showing that they possess a knowledge sufficient to enable them to read scientific treatises or memoirs in these languages, before being admitted to the degree. Candidates who have taken either of these languages at the Matriculation Examination will be exempted from further examination in that language.

#### FIRST YEAR COURSES.

After matriculation in the Faculty, candidates who have not passed the Intermediate Examination are required to attend courses of study for at least one session in three of the following subjects :—

- (i.) Pure Mathematics.
- (ii.) Physics.
- (iii.) Chemistry.
- (iv.) Elementary Biology (*Zoology* and *Botany*).

Candidates who are taking Theory and Practice of Education in one of the University Training Colleges are permitted to offer that subject in place of either Zoology or Botany under heading (iv.).

Candidates, after presenting to the Registrar the necessary schedules of qualification in two or more of the three subjects, will be admitted to the Intermediate Examination in those subjects in June.

Candidates must pass in the three selected subjects in order to complete the examination, but they may present themselves and pass in two subjects at one examination, and take the remaining subject at a later examination.

Two printed examination papers will be set in each section of the examination, and there will be a practical examination in Physics, Chemistry, Zoology, and Botany. Examiners will not be precluded from holding a *viva voce* examination in any subject, if they think it desirable.

There will be a supplementary examination in September, and candidates who have taken and passed in two or more of their subjects may complete the examination in September. Candidates who have failed in any of the subjects in June may be allowed by the Board of Examiners to sit for the Examination again in September, or may be required to attend a further course in that subject before being admitted to a subsequent examination.

#### SECOND AND THIRD YEARS' COURSES.

After passing the Intermediate Examination candidates are required to take University Courses in one principal subject and two subsidiary subjects, or in two principal subjects, under the following groups :—

*Principal Subjects.*—Mathematics (Pure and Applied), Physics, Chemistry, Geology, Zoology, Botany, Physiology, Anatomy and Anthropology, Biology and Chemistry of Fermentation (together with Chemistry as a double subsidiary subject).

*Subsidiary Subjects* : Pure Mathematics, Applied Mathematics, Elementary Pure Mathematics together with Elementary Applied Mathematics, Physics, Chemistry, Geology, Botany, Zoology, Physiology, Logic, Psychology, Metallurgy, Mining.

*Double Subsidiary Subjects* (each counting as two):—Physics, Chemistry, Geology, Botany, Zoology, Anatomy and Anthropology, Physiology.

The principal subjects must be studied for two years, while subsidiary subjects need in general only be studied for one year ; but Subsidiary Mathematics extends over two years. By the selection of a double subsidiary subject a student is enabled to continue the study of a subsidiary subject for a second year, instead of choosing a fresh subsidiary subject.

Candidates, after presenting to the Registrar the necessary schedules of qualification in the selected subjects, are admitted to the Final Examination. The examinations in principal subjects are of a higher standard and cover a wider range than the examinations in subsidiary subjects, and must in general be taken at the end of the third year ; but in Mathematics, Physics, and Geology, candidates may be examined in the first part of the course at the end of the second year.

The examination in a subsidiary subject studied during the year following the completion of the Intermediate Examination may be taken at the end of the year.

The examination will be conducted by the printed papers, and also by tests of practical work ; but the Examiners will not be precluded from holding a *viva voce* examination in any subject, if they think it desirable.

The B.Sc. class lists will be published in three divisions, the first of which will be called Honours, and will contain the names of those candidates who distinguish themselves in their principal subject.

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#### B.Sc. IN APPLIED SCIENCE.

##### I.—ENGINEERING.

Candidates may obtain the Degree of Bachelor of Science in any of the three branches of Engineering, viz., (a) Mechanical Engineering, (b) Civil Engineering, (c) Electrical Engineering, after attendance on prescribed courses of study in the University extending over a period of at least four years after matriculation.

But if a candidate before entrance to the University has passed the Intermediate Science or the First Engineering Examination (or an examination recognised by the University as equivalent), he will be allowed to enter on the second year courses of study, and will be eligible for the degree after three years instead of four.

The courses of study are briefly indicated in the following tables, and further particulars of the various subjects may be found in the Engineering Syllabuses.

#### FIRST YEAR COURSES.

The prescribed courses for the first year are the same in all the three branches of Engineering.

- (i.) Engineering Lectures, Drawing and Workshop.
- (ii.) Mathematics, Pure and Applied.
- (iii.) Physics, Lectures and Laboratory.
- (iv.) Chemistry, Lectures and Laboratory.

#### SECOND YEAR COURSES.

- (i.) Engineering Lectures, Exercises, Drawing and Workshop.
- (ii.) Mathematics, Pure and Applied.
- (iii.) Physics, Lectures and Laboratory.
- (iv.) Geology, for Civil Engineers, or Metallurgy, for Mechanical and Electrical Engineers.
- (v.) Workshop in the Summer Vacation.

#### THIRD YEAR COURSES.

##### *A. For Mechanical Engineers.*

- (i.) Engineering Lectures, Laboratory, Drawing and Workshop.
- (ii.) Mathematics, Pure and Applied.
- (iii.) Workshop in the Summer Vacation.

##### *B. For Civil Engineers.*

- (i.) Engineering Lectures, Laboratory, Drawing and Workshop.
- (ii.) Mathematics.
- (iii.) Surveying in the Summer Vacation.

*C. For Electrical Engineers.*

- (i.) Engineering Lectures, Laboratory, Drawing and Workshop.
- (ii.) Mathematics, Pure and Applied.
- (iii.) Workshop in the Summer Vacation.

## FOURTH YEAR COURSES.

Candidates in their fourth year will spend their whole time at Engineering subjects, including Lectures, Laboratory, Drawing, and Workshop. Civil Engineers also attend Lectures, Laboratory and Fieldwork in Geology.

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At the end of each session there will be a University Examination on the prescribed courses of study, to which candidates will be admitted after presenting to the Registrar the necessary schedules of qualification. Candidates who fail to pass in the Engineering subjects and at least one of the other subjects are required to repeat the year's courses ; candidates who pass in the Engineering subjects and at least one of the other subjects are allowed to offer their remaining subjects at a subsequent examination.

There will be supplementary examinations in September for first, second, and third year candidates to enable those who have passed in Engineering and one other subject to complete the examination if permitted by the Board of Examiners ; but the Board of Examiners may if it thinks fit require any candidate to attend a further course of study in any subject before sitting for another examination.

The degree of B.Sc. (Engineering), provided that the Engineering Matriculation Examination be passed on entering upon the course of study, is recognised as a preliminary qualification for appointment of Assistant Engineers to the permanent establishment of the Public Works Department of India, and as exempting from the

examination of the Institution of Civil Engineers for Associate Membership.

The University Laboratories in Engineering are also included in the list of suitable technical schools for the training of Engineers in the Mercantile Marine, issued by the Board of Trade.

## II.—METALLURGY.

Candidates may obtain the Degree of Bachelor of Science in Metallurgy after attendance on prescribed courses of study extending over a period of three years after matriculation, and passing examinations at the end of each year.

The general arrangements for the examinations are similar to those already described in connexion with the Degree in Engineering.

The prescribed courses are as follows :—

### FIRST YEAR COURSES.

- (i.) Pure Mathematics.
- (ii.) Physics, Lectures and Laboratory.
- (iii.) Chemistry, Lectures and Laboratory.
- (iv.) Metallurgy and Laboratory.
- (v.) Engineering, Drawing and Workshop.

### SECOND YEAR COURSES.

#### *A. For Metallurgists.*

- (i.) Metallurgy, Lectures and Laboratory.
- (ii.) Engineering Lectures, Drawing and Workshop.
- (iii.) Chemistry, Laboratory.
- (iv.) Geology, Lectures and Laboratory.

#### *B. For Metallurgical Chemists.*

- (i.) Metallurgy, Lectures and Laboratory.
- (ii.) Engineering, Lectures, Drawing and Workshop.
- (iii.) Chemistry, Lectures and Laboratory.

## THIRD YEAR COURSES.

*A. For Metallurgists.*

- (i.) Metallurgy, Lectures and Laboratory.
- (ii.) Metal Mining, Lectures, Surveying, and Laboratory.

*B. For Metallurgical Chemists.*

- (i.) Metallurgy, Lectures and Laboratory.
- (ii.) Chemistry, Lectures and Laboratory.

For further particulars of these courses, see the Syllabus of Metallurgy.

## III.—MINING.

Candidates may obtain the Degree of Bachelor of Science in Mining after attendance on prescribed courses of study extending over a period of at least three years after matriculation, and passing examinations at the end of each year. Candidates are further required to have practical experience in a mine for at least two months in each year, or to have had at least four months of such experience before entering on their courses in the University.

The general arrangements for the examinations are similar to those already described in connexion with the Degree in Engineering.

The prescribed courses are as follows :—

## FIRST YEAR COURSES.

- (i.) Mathematics.
- (ii.) Physics, Lectures and Laboratory.
- (iii.) Geology, Lectures and Laboratory.
- (iv.) Mining, Lectures and Laboratory.

## SECOND YEAR COURSES.

- (i.) Mathematics.
- (ii.) Mining, Lectures and Laboratory.
- (iii.) Geology, Lectures and Laboratory.
- (iv.) Chemistry, Lectures and Laboratory.
- (v.) Engineering Drawing.

## THIRD YEAR COURSES.

- (i.) Mining.
- (ii.) Engineering, Lectures and Laboratory.
- (iii.) Metallurgy, Lectures and Laboratory.

For further particulars of these courses, see the Syllabus of Mining.

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DEGREES IN ENGINEERING, MINING, OR  
METALLURGY FOR HOLDERS OF DIPLOMAS OF  
THE UNIVERSITY OF OXFORD.

Graduates of the University of Oxford who have obtained the Diploma in scientific Engineering and Mining subjects granted by that University, are eligible for the Degree of B.Sc. in Engineering, Mining, or Metallurgy, after two years' study, without examination in the previous parts of the course; provided that Mechanical and Electrical Engineers have taken at Oxford the subjects (d) Engineering Principles and Machine Drawing, and (i) Electricity, and Mining students have taken at Oxford the subjects (e) Surveying, (f) Geology, and (h) Mining and Engineering Hygiene, and Mine Ventilation.

Such students should be matriculated as undergraduates of the University before they commence their course.

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## M.Sc. DEGREE.

Bachelors of Science may be admitted to the degree of Master of Science after a further course of study extending over not less than one academic year.\* Candidates are required either—

- (i.) To present a thesis and, if the Examiners think it desirable, to pass a *viva voce* examination ; or—

\* In ordinary cases, the year of study must be spent at the University of Birmingham; but candidates desirous of pursuing some special line of study at some other place may receive permission to do so on the recommendation of the Faculty.

(ii.) To pass an examination, both written and practical.

Candidates are required to send two copies of the thesis they present.

Bachelors of Science in Engineering and Mining may be admitted to the Degree of M.Sc. either as already provided after one year's further study in the University subsequent to the B.Sc., or after two years' subsequent to the B.Sc., without attendance at the University; such candidates will be required—

- either (1) to present a thesis, and, if the Examiners think it desirable, to pass a *viva voce* examination ;  
or (2) To pass an examination, both written and practical.

Candidates are required to send two copies of the thesis they present.

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#### D.Sc. DEGREE.

Candidates may be admitted to the degree of Doctor of Science, after the expiration of at least two academic years after qualifying for the B.Sc. degree, on the presentation and approval of a printed and published thesis embodying the results of original research, or contributing generally to the advancement of Science.

Candidates are required to send two copies of the thesis they present.

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For ADMISSION OF GRADUATES from other Universities, see p. 176.

## ORDINARY COURSES FOR THE B.A. DEGREE.

Candidates for the Degree of Bachelor of Arts are required to have spent at least three sessions in attendance on lectures in the University after having been matriculated in the Faculty, and to pass three University Examinations, the Intermediate, and the First and Second Degree Examinations, in addition to the Class Examinations held by the Professors in connexion with their courses.

Candidates who pass the Intermediate Examination before entering the University are allowed to commence their studies at the second year's courses, and are eligible to sit for their final B.A. Examination after two years of study. Such candidates will not be eligible to receive the degree until they have completed another year of study, after which they will be eligible to receive the M.A. degree.

### FIRST YEAR'S COURSES.

After being matriculated in the Faculty, candidates who have not passed the Intermediate Examination are required to attend courses of study for at least one session in each of the following subjects :—

- (i.) Latin.
- (ii.) English Language and Literature.
- (iii.) Either Pure Mathematics or Logic.
- (iv.) Two of the following, of which one must be a modern foreign language or Hellenistic Greek :—Greek (Classical or Hellenistic), French, German, Italian, Spanish, Logic or Pure Mathematics (if not already selected under iii.), a Physical or a Natural Science, Theory and Practice of Education, British Institutions, Geography.

Candidates, after presenting to the Registrar the necessary schedules of qualification in three or more of these subjects, will be admitted to the Intermediate Examination in those subjects.

Two printed examination papers will be set in each of the five subjects of Examination. There will also be a *viva voce* examination in Latin, Greek, and Modern Foreign Languages. The Examiners, however, will not be precluded from holding a *viva voce* examination in any subject, if they think it desirable.

The Intermediate Pass list will be issued in three divisions, the first of which will contain the names of those candidates who pass with distinction.

There will be a supplementary examination in September, and candidates who have taken and passed in three or more of their subjects may complete the examination in September. Candidates who have failed in any of the subjects in June may be allowed by the Board of Examiners to sit for the examination again in September, or may be required to attend a further course in that subject before being admitted to a subsequent examination.

#### SECOND AND THIRD YEARS' COURSES.

Candidates are required to take either a two-year course of study in each of four principal subjects, or a two-year course of study in each of three principal subjects, and a one-year course in each of two subsidiary subjects. When four principal subjects are taken, one subject must be selected from each of the following groups i.—iv.; and when five subjects are taken one must be selected from each of the following groups i.—v. :—

- (i.) One Ancient Language and Literature (Latin, Greek or Hebrew).
- (ii.) One Modern Foreign Language and Literature (French, German, Italian, Spanish, or, provided that Greek is not taken under heading (i), Hellenistic Greek).
- (iii.) Either English Literature or History (Ancient or Modern).
- (iv.) Either Mathematics or Philosophy.

- (v.) A "special subject" to be selected among the subjects taught in the University at compatible hours. This subject must be either
- (a) A fifth subject (other than the four already selected) from one of the preceding four groups, or
  - (b) A fifth subject not contained in any of the above groups, studied for one year as a subsidiary subject; *e.g.*, Logic (if not already taken at the Intermediate Examination), a subject or group of subjects taught in the Faculty of Commerce, as approved by the Faculty of Arts; History of Educational Ideas, a Physical or Natural Science.

There will be a written examination at the end of each Session, at which two printed examination papers will be set in each subject studied during that Session, and candidates will be admitted to these examinations after presenting to the Registrar the necessary schedules of qualification.

There will also be a *viva voce* examination in Latin, Greek, and Modern Foreign Languages. The Examiners, however, will not be precluded from holding a *viva voce* Examination in any subject, if they think desirable.

Candidates who pass the examination in one or more of their principal subjects shall not be required to be re-examined in those subjects, provided they have attained a standard equal to the second division at least.

The B.A. pass list will be issued in three divisions, the first of which will contain the names of those candidates who pass with distinction in one or more of their principal subjects.

Candidates who have failed in any of the subjects offered for examination may be required by the Faculty to attend a further course of study in that subject before being admitted to a subsequent examination.

## M.A. DEGREE.

Bachelors of Arts may be admitted to the degree of M.A. after at least one further year of study in the University on passing an Examination in one or in two of the principal subjects taken at the B.A. Degree, and presenting a dissertation indicative of acquaintance with the methods of research and connected with the subject or with one of the subjects offered for examination. Two copies of the dissertation must be sent to the Registrar before the appointed date. Candidates studying for one year only will be required to give their whole time to study, and to attend the lectures prescribed in their subject or subjects, but will not be required to sit for terminal examinations. Candidates who cannot give their whole time to study may extend their studies over two or more years; but in every such case candidates must obtain the Faculty's approval of the course of study they intend to pursue, and must satisfy the Faculty at the end of their first year that their work and progress are satisfactory. In ordinary cases the year or years of study must be spent at the University of Birmingham; but candidates desirous of pursuing some special line of study at some other University (British or Foreign) may receive permission to do so on the recommendation of the Faculty.

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ALTERNATIVE COURSES FOR DEGREES IN ARTS.

These courses are designed to allow students, especially those who are preparing for the career of a teacher in the higher forms of secondary schools, to devote themselves to a smaller number of subjects studied at a much higher standard than those prescribed in the preceding regulations.

## (a) SCHOOL OF MODERN LANGUAGES.

Candidates may be admitted to the School of Modern Languages after passing the Intermediate Examination

in Arts, the following subjects being taken :—(i.) French (ii.), German, (iii.) Latin, (iv.) English Language, Literature and History, (v.) either Mathematics or Logic.

This Examination may be taken either at entrance to the University in lieu of the Matriculation Examination, or at the end of one year's course of study at the University after passing the Matriculation Examination.

Candidates not having already been matriculated who offer Logic instead of Mathematics at the Intermediate Examination will be required to qualify in Mathematics at the Matriculation Examination, either in July or September.

After completing a three years' course of study and passing three examinations, and submitting a thesis approved by the Examiners (two copies of which must be presented), students of the School will be admitted to the degree of Master of Arts in the School of Modern Languages.

The course for the degree of Master of Arts in the School of Modern Languages embraces the following subjects of study :—

- (i.) French *or* German, taken as a principal subject.
- (ii.) German *or* French *or* English, taken as a subsidiary subject.
- (iii.) An additional subject during the first two years of the course, viz., either German *or* French *or* English *or* Latin.

The First Examination in the School of Modern Languages will be held at the end of the first year of study.

The Second Examination in the School of Modern Languages will be held at the end of the second year of study.

The Final Examination in the School of Modern Languages will be held at the end of the third year of study, and will include papers of the standard of the

ordinary M.A. Examination in the following groups, of which Groups I. and II. must be taken in the principal subject, and Group I. in the subsidiary subject :—

### **French.**

#### **GROUP I.**

- (i.) French Essay.
- (ii.) Unprepared French Translation.
- (iii.) Selected French Authors.
- (iv.) History of French Literature.

#### **GROUP II.**

- (i.) French History and Institutions.
- (ii.) Old and Middle French Texts.
- (iii.) Romance Philology.
- (iv.) A selected period of French Literature.

### **German.**

#### **GROUP I.**

- (i.) German Essay.
- (ii.) Unprepared German Translation.
- (iii.) Selected German Authors.
- (iv.) History of German Literature

#### **GROUP II.**

- (i.) German History and Institutions.
- (ii.) Old and Middle High German Texts.
- (iii.) Germanic Philology.
- (iv.) A selected period of German Literature.

### **English (if taken as a subsidiary subject).**

- (i.) English Essay.
- (ii.) Shakspere.
- (iii.) Selected English Authors.
- (iv.) History of English Literature.

For Scholarships tenable in the School of Modern Languages, see Harding Scholarships in German, p. 415.

### **(b) SCHOOL OF CLASSICS.**

Candidates may be admitted to the School of Classics after passing the Intermediate Examination in Arts, the following subjects being taken :—(i.) Latin ; (ii.) Greek ;

(iii.) English Language, Literature and History ; (iv.) A Modern Foreign Language ; (v.) Either Mathematics or Logic.

This Examination may be taken either at entrance to the University in lieu of the Matriculation Examination, or at the end of one year's course of study at the University after passing the Matriculation Examination.

Candidates not having been already matriculated who offer Logic instead of Mathematics at the Intermediate Examination will be required to qualify in Mathematics at the Matriculation Examination, either in July or in September.

After completing a three years' course of study and passing three examinations, and submitting a thesis approved by the Examiners (two copies of which must be presented), students of the School will be admitted to the Degree of Master of Arts in the School of Classics.

The course for the degree of Master of Arts in the School of Classics embraces the following subjects of study :—(i.) Latin ; (ii.) Greek ; (iii.) English Literature, or some modern foreign language and literature, taken as an additional subject during the first two years of the course.

The first examination in the School of Classics will be held at the end of the first year of study.

The second examination in the School of Classics will be held at the end of the second year of study.

The final examination in the School of Classics will be held at the end of the third year of study, and will include papers of the standard of the ordinary M.A. Examination in Latin and Greek, as follows :—(i.) Selected authors (Latin) : 2 papers ; (ii.) Selected authors (Greek) : 2 papers ; (iii.) Unseen translation (Latin) : 1 paper ; (v.) Unseen translation (Greek) : 1 paper ; (v.) Composition (Latin) : 1 paper ; (vi.) Composition (Greek) : 1 paper ; (vii.) History of Literature and Language, with special reference to the authors selected (Latin and

Greek) : 2 papers ; (viii.) Ancient History and Archaeology : 1 paper ; (ix.) Ancient Philosophy : 1 paper.

(c) SCHOOL OF ENGLISH LITERATURE.

Candidates may be admitted to the School of English Literature after passing the Intermediate Examination in Arts. This Examination may be taken either at entrance to the University in lieu of the Matriculation Examination, or at the end of one year's course of study at the University, after passing the Matriculation Examination.

Candidates not having already been matriculated who offer Logic instead of Mathematics at the Intermediate Examination will be required to qualify in Mathematics at the Matriculation Examination, either in July or September.

After completing a three years' course of study and passing three examinations, and on the approval of a thesis, students of the School will be admitted to the Degree of Master of Arts in the School of English Literature.

The course for the Degree of Master of Arts in the School of English Literature embraces the following subjects of study :—

- 1. *Principal Subject* : English Literature studied for three years.
- 2. *Subsidiary* : Latin studied for three years.
- 3. *Additional* : Either Greek or Italian, or French or German studied for two years.

The first Examination in the School of English Literature will be held at the end of the first year of study, and candidates will be examined in English, Latin, and the Additional Subject.

The Second Examination in the School of English Literature will be held at the end of second year of study, and candidates will be examined in the same subjects as the first.

The Final Examination will be held at the end of the third year of study, and will include papers in English of the standard of the ordinary M.A. Examination, except in the Subsidiary and Additional subjects, which will be of the ordinary B.A. standard, but in the subsidiary subject, Latin, candidates will ordinarily be expected to attend Course IV., and to offer for examination the books read in that Course.

The course of study may, therefore, be represented by the following papers in the Final Examination :—

*Principal Subject :*

(a) General History of English Literature	...	...	...	I paper
(b) The Selected Books	...	...	...	I paper
(c) Literary Theory	...	...	...	I paper
(d) Anglo Saxon	...	...	...	I paper
Middle English	{	...	...	I paper
(e) Influence of Latin and other Literatures on English	...	...	...	2 papers
(f) English History	...	...	...	I paper
(g) Philosophy	...	...	...	I paper

*Subsidiary Subject :*

(a) Prepared Books	...	...	...	I paper
(b) Translation at sight	...	...	...	I paper
(c) Composition	...	...	...	I paper

*Additional Subject :*

(a) Translation at sight and Composition	...	...	...	I paper
(b) Prepared books	...	...	...	I paper

Students in the School of English Literature are required to attend eight lectures per week in the Principal Subject, four in the Subsidiary, and three in the Additional.

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(d) OTHER SPECIALISED COURSES.

Candidates may be admitted to the Degree of Master of Arts after completing a three year course of study in other specialised courses. This course of study shall embrace (1) two principal subjects studied during three years each; (2) one subsidiary subject studied during two of the three years.

The following may be taken as principal subjects: Latin Language and Literature, Greek Language and Literature, French Language and Literature, German Language and Literature, English Language and Literature, Modern History, Mathematics, Mental and Moral Philosophy.

Any of the above or one of the following may be taken as the subsidiary subjects:—(1) Theory and Practice of Education, or (2) a Physical or Natural Science, or (3) a subject or group of subjects taught in the Faculty of Commerce, as approved by the Faculty of Arts.

The general regulations for the courses are similar to those in the special Schools of Classics, English and Modern Languages.

D.Phil. and D.Litt. Degrees.

Masters of Arts may be admitted to the degree of D.Phil. (Doctor Philosophiæ) or D.Litt. (Doctor Litterarum) on the presentation and approval of a Thesis, embodying the results of original research or contributing generally to the advancement of learning. The Thesis shall be submitted to a Board of Examiners, consisting of the two Examiners in the Department concerned, and an expert in the subject of the Thesis, and no doctorate shall be awarded unless the Examiners report that the Thesis is worthy of publication. Three printed or type-written copies of the Thesis must be sent to the Registrar on or before March 31st.

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## ADMISSION OF GRADUATES FROM OTHER UNIVERSITIES.

### FACULTIES OF SCIENCE AND ARTS.

Graduates or persons who have passed degree examinations of other Universities, who present evidence satisfactory to the Faculty concerned that they are qualified to pursue a course of advanced study or research, are allowed to enter the University and to become candidates for the degree of Master (without taking the Bachelor's degree) after two years of regular study or research, provided that they satisfy the Faculty at the end of their first year that their work is satisfactory. Under ordinary circumstances such candidates are expected to give the whole of their time to such study or research, but in special cases the Faculty may exercise its discretion in relaxing this condition. Application, with full statement of the circumstances of the case, must be made to the Dean of the Faculty before the commencement of the Session. Persons who take the Master's degree under this regulation will be allowed to become candidates for the Doctor's degree at any time after one year from the attainment of the Master's degree, without further attendance at the University.

All students admitted under this regulation must be matriculated at the commencement of their period of study, and are then called Graduate Students and are members of the Guild of Undergraduates.

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## SECONDARY TEACHERS' DIPLOMA REGULATIONS FOR 1907-8.

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1. Candidates for the Secondary Teachers' Diploma shall have been admitted to a Degree in the University of Birmingham or in some other University of the United Kingdom, or shall have obtained such other

qualifications as shall be approved by the Senate of the University as representing a standard equivalent to such degree.

2. The course for candidates for the Diploma shall extend over one academical year, and shall consist of regular attendance in a Secondary School approved by the University for the purpose (§3) and of attendance upon courses of lectures in the University (§7).

3. The attendance at the Secondary School shall be regular and continuous throughout the year; and it shall be arranged so as to include not less than three school mornings of the week. Each candidate shall, under the general supervision of the Head Master or Head Mistress, be specially attached for given periods to the work of a Master or Mistress, who shall make the candidate as thoroughly acquainted as possible with school methods, arrangements of curriculum, etc. Any work (including preparation for lessons) done by the candidate in connection with the school shall not extend beyond the ordinary hours of morning school. The preparation of lessons need not necessarily be done at the School.

4. A satisfactory report from the Head Master or Head Mistress shall be presented before the candidate can be admitted to the examination.

5. Each candidate will be required in the course of the year to give specimen lessons to a class of the school under the joint supervision of the Head Master or Head Mistress and of the University authorities.

6. Candidates shall attend courses of lectures at the University on such subjects as the following:— Theory and Practice of Teaching, History of Educational Ideas, Psychology, School Hygiene, Voice Production, and Methods of Teaching in Specific Subjects. Such lectures shall average not less than five hours per week throughout the year. It will be arranged that the lectures be delivered at the University during the afternoon. The course of attendance at the University shall also, by arrangement with the City of Birmingham

Education Committee, include observation of the method and arrangements of elementary schools.

7. The examination shall take place, as a rule, during June, and shall consist both of written papers and of the delivery of practical lessons. The examination papers, while following the general lines of the courses of lectures which have been attended at the University, will not be confined to the actual subject-matter dealt with in them, but will include examination in a wider range of reading on educational subjects. The fee for the examination is £2.

8. The list of successful candidates will be issued in alphabetical order, and no special honours will be assigned to any candidate. The Diploma will indicate at what school the candidate has attended under §3.

The Head Masters or Head Mistresses of the following schools in the Midland district are willing to accept candidates for the Teachers' Diploma in their schools under the conditions of §§ 3, 4, 5, and their schools have been approved by the University for these purposes :—

**FOR BOYS :**

Birmingham, King Edward's High School.

      ,,      King Edward's Grammar School, Aston

      ,,      ,,      Camp Hill.

      ,,      ,,      Five Ways.

      ,,      Central Secondary School.

      ,,      St. Philip's R.C. Grammar School.

Bromsgrove School.

Burton-on-Trent Grammar School.

Cheltenham College.

      ,,      Dean Close School.

Coventry, King Henry VIII. Grammar School.

Denstone College.

Derby School.

Handsworth Grammar School.

Kidderminster, King Charles I. Grammar School.

Leicester, Wyggeston Boys' School.

Malvern College.

Newcastle-under-Lyme School.

Repton School.

Shrewsbury School.

Stourbridge, King Edward's Grammar School.

Sutton Coldfield Grammar School.

Walsall Grammar School.

Warwick, King's County School.

Wolverhampton, Tettenhall College.

Worcester, King's School.

Royal Grammar School.

FOR GIRLS:

Birmingham, King Edward's Grammar School, Camp Hill.

„ King Edward's Grammar School, Aston.

Coventry High School for Girls.

Edgbaston High School for Girls.

Leicester, Wyggeston High School for Girls.

Shrewsbury High School for Girls.

Stafford High School for Girls.

Walsall, Queen Mary's High School for Girls.

Warwick, King's High School.

FOR BOYS AND GIRLS:

West Bromwich Municipal Secondary School.

Candidates for the Secondary Teachers' Diploma shall pay a fee of five guineas per session, which shall include the Entrance Fee. This fee will admit to the course on the History of Educational Ideas (Mr. Roscoe), to the course on Psychology (Professor Muirhead), and to a course on the General Principles of Teaching (Miss Joyce), and also to a number of short courses of lectures, which will be specially arranged for Diploma candidates.

Acting Teachers in Secondary Schools will be admitted to all these special courses on payment of a Composition Fee of £1 11s. 6d. per session, which shall include the Entrance Fee. The fee for any one of these courses will be 10s., including Entrance Fee of 5s.

Communications may be addressed to

Professor ALFRED HUGHES,

at the University.

## DIPLOMA OF ART INSTRUCTOR.

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A Diploma of Art Instructor is awarded to candidates trained by the University of Birmingham in conjunction with the Municipal School of Art. Candidates for this Diploma are required to have satisfied the following conditions :—

(a) They shall have pursued for not less than four years, in the Birmingham School of Art, a course of study, and *either* shall have attained the grade of Art Teacher or Master, *or* shall have passed through a course of instruction approved by the Committee of the Birmingham School of Art.

(b) Before having attended this course of instruction they shall have passed either (1) the Matriculation Examination of the University of Birmingham, or (2) the Matriculation Examination of some other University, or (3) such other examination or examinations as may be approved of by the Senate of the University. Provided that, for the present and until the Senate shall otherwise decide, the examination alluded to in this section may be passed during or after the course of study laid down in clause (a).

(c) Subsequently to the passing of the examination mentioned in clause (b) they shall have attended in the University of Birmingham during one year a course in English Literature, and at least two out of the following courses, each of which shall be of one year's duration. Such courses may be taken in separate years or in two years, but not, unless by special permission of the Senate, in one year :—

- (1) Modern History and Archaeology.
- (2) Ancient History and Archaeology.
- (3) French Language and Literature.
- (4) German Language and Literature.

- (5) Italian Language and Literature.
- (6) Latin.
- (7) Greek.
- (8) External forms of Plants and Animals.
- (9) Earth Structure and Landscape.

(d) They shall have passed examinations in the subject of each course, which examinations may be passed separately at the termination of each course or otherwise.

(e) They shall have attended a course of Lectures on the Art of Teaching delivered in the University.

(f) Each candidate shall have acted for at least twelve months as an Assistant Teacher or Student Teacher under the supervision of one of the Teachers of the Birmingham School of Art, or of some other approved teacher, and shall have received, from such teacher, a certificate of competency to teach.

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## INSPECTION OF SCHOOLS.

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The University undertakes to inspect and report upon Secondary Schools in the Midland District under the following conditions :—

- (i.) The school shall be open to the inspection of the Organizing Professor of Education or other official of the University during the whole of the academical year, *i.e.*, September to July, on which the report is to be made.
- (ii.) The representative of the University shall consider the curriculum of the school in conjunction with the Head Master or Head Mistress of the school ; he shall have the opportunity of hearing lessons given by members of the staff, and of discussing the methods of teaching with them ; and he shall from time to time see written work of the scholars.
- (iii.) It is intended, however, that much freedom shall be given to teaching staffs as regards methods and curricula ; and they will not be required to conform to the conditions of any special examination.
- (iv.) An examination will be held near the end of the school year, on which Senior or Junior School Certificates will be awarded. The papers will be set by examiners of the University, after they have made themselves fully acquainted with the aims and methods of the teachers of the classes concerned, and the scope of their work. But the school may, if preferred, make use of the papers set by the University for other purposes, *e.g.*, those of the Matriculation Examination.
- (v.) The University will furnish a report to the authorities of the school at the end of the school year ; such report will take account of the results both of examination and inspection, and may deal with such matters as buildings and equipment.

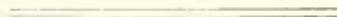
(vi.) If desired, one department of a school (*e.g.*, a modern side) may be inspected and reported upon separately.

(vii.) The following will be the charges to the school :—

For Inspection, for a school of 100 scholars or less	...      ...      ...      ...      ... £5 os.
For Inspection, for a school of between 100 and 200 scholars	...      ...      ...      ... £7 10s.
For the Report	...      ..      ...      ... £2 os.
For the Certificate Examination one shilling per candidate per paper, and (a) where special papers are set for the school, £2 2s. per paper; (b) where the papers of the Matriculation Examination are used, no charge will be made for the paper.	

(viii.) Each scholar who qualifies for a Senior School Certificate must pay £1 before it can be issued to him, and will be required to pay £1 in addition if he uses it as the qualification for matriculating at the University.

Each scholar who qualifies for a Junior School Certificate must pay 10s. before it can be issued to him.



## Time Tables.

## PRELIMINARY CLASSES.

SUBJECT.		Mon.	Tues.	Wed.	Thurs.	Fri.
Animal Biology ...	...	...			To be arranged.	
Physiography ...	...	...	...	3.30	...	3.30
Latin ...	...	...	...	4.30	...	4.30
Greek ...	...	...	2.30	...	...	2.30
English Literature ...	...	...	9.30	...	9.30	...
English History ...	...	...	...	9.30	...	9.30
English Composition (Winter and Spring) }	...	...	2.30*	...	...	...
French ...	...	3.30	...	...	2.30	3.30
German ...	...	2.30	...	...	2.30	2.30

\* Winter and Spring Terms.

## FIRST YEAR SCIENCE COURSES.

SUBJECT.	Course	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Pure Mathematics ...	I.	12.30	11.30	...	11.30	12.30	...
Physics ...	I.	11.30	...	11.30	...	11.30	...
" (Practical) ...	...	3.0	or	9.30	or	3.0	...
Chemistry							
(Win. and Spring)	I. A*	9.30	9.30	9.30	9.30	...	...
" Tutorial	I.A *	2.0	...	...	...	9.30	...
" (Summer) ...	I. B	9.30	...	9.30	...	9.30	...
" Tutorial Class	...	...	<i>By arrangement.</i>				
Zoology ...	I.	...	12.30	...	12.30	...	...
" (Practical) ...	...		2.15 to 4.30		2.15 to ↑ 4.30	...	...
Botany ...	I.	4.0	or	11.0	...	4.0*	...
" (Practical) ...	...		<i>By arrangement.</i>				
Geography ...	I.		<i>By arrangement.</i>				
Metallurgy ...	I.	...	...	...	...	...	10.0
" (Practical) ...	...	...	2.5	...	...	...	...
Mining ...	I.	...	3.0	...	...	3.0	...
" ...	I. A	...	2.0*	...	...	...	...
Education ...	I.	...	10.30	...	...	10.30	...
" ...	II.	11.30	10.30	10.30 11.30}	...	...	...

\* Winter and Spring Terms only.

† Summer Term only.

## FIRST YEAR ARTS COURSES.

SUBJECT.	Course	Mon.	Tues.	Wed.	Thurs.	Fri.
Latin ... ... ...	I.	2.30	...	...	2.30	...
„ (Composition) ...	...	...	...	3.30	...	2.30
Greek ... ... ...	I.	3.30	...	...	3.30	3.30
English Literature ...	I.	10.30	...	...	10.30	...
„ Language ...	...	...	...	...	...	9.30
French ... ... ...	I. Aα	3.30	...	...	4.30	11.30
„ ... ... ...	I. Aβ	4.30	...	...	4.30	
„ ... ... ...	I. B	4.30	4.30	...	...	
German ... ... ...	I.	11.30	...	...	3.30	3.30
Pure Mathematics ...	I.	12.30	11.30	...	11.30	12.30
Geography I. ... ...					<i>By arrangement.</i>	
Logic ... ... ...	I.	9.30	9.30	...	9.30	...
History, Brit. Inst. ...	I.	...	10.30	10.30	...	10.30
„ ... ... ...	IV.	...	...	9.30	...	...
Education... ... ...	I.	...	10.30	...	...	10.30
„ ... ... ...	II.	11.30	10.30	10.30 11.30}	...	...

*SECOND AND THIRD YEARS' SCIENCE COURSES.*

SUBJECT.	COURSE	MON.	TUES.	WED.	THURS.	FRI.	SAT.
Pure Mathematics ...	II.	10.30	...	10.30	...	10.30	...
" "	III.	9.30	...	9.30	...	9.30	...
" "	IV.	9.30	...	9.30	...	9.30	...
Applied Mathematics I.	A	9.30	...	9.30	...	9.30	...
	B	...	10.30	...	10.30	...	9.30
Physics ...	II.	10.30	...	10.30	...	10.30	...
" ...	II.	11.30	...	11.30	...	11.30	...
" (Practical) ...	III.	4.0	10.30	...	10.30	...	...
Chemistry ...	II.						<i>By arrangement.</i>
" ...	III.						<i>By arrangement.</i>
" (Practical) ...	...						
Zoology ...	II.	12.30	...	12.30	...	12.30	...
" ...	III.						
" (Practical) ...	...						<i>By arrangement.</i>
Botany ...	II.	9.30	11.30	...	11.30	9.30	...
" ...	III.						
" (Practical) ...	...						<i>By arrangement.</i>
Geology ...	I.		9.30	...	9.30	...	9.30
" (Excursions) ...	...						<i>Saturdays in the Summer.</i>
" (Practical) ...	...						
" ...	II.	11.30		10.30		10.30	...
" (Practical) ...	...	10.30		11.30		11.30	...
" (Field Work) ...	...			10.30		9.30	...
" ...	III.						<i>Fridays in the Summer.</i>
Anatomy ...	...						<i>By arrangement.</i>
Anthropology ...	...						<i>See Medical Syllabus.</i>
Physiology ...	...						<i>By arrangement.</i>
" Advanced	...						<i>See Medical Syllabus.</i>
Metallurgy ...	II.		2.30	...	...	2.30	...
" ...	III.		...	11.0	...	11.0	...
Mining ...	II.		...	4.0	...	4.0	...
" ...	II. A		...	11.0	...	...	...
Education ...	III.		...	12.0	...	...	...
							<i>By arrangement.</i>

## SECOND YEAR ARTS COURSES.

SUBJECT.	COURSE	MON.	TUES.	WED.	THURS.	FRI.
Latin ... ... ...	II.	... 2.30	... 2.30	... 2.30	... 2.30	... 2.30
Greek ... ... ...	II.	... 10.30	... 10.30	... 10.30	... 10.30	... 10.30
English ... ... ...	II.	... 11.30	9.30 9.30	9.30 9.30	9.30 11.30*	11.30*
French ... ... ...	II.	9.30 9.30	9.30 9.30	9.30 9.30	9.30 9.30	9.30 9.30
German ... ... ...	II.	... 3.30	... 3.30	... 3.30	... 3.30	... 4.30
Pure Mathematics ... ...	II.	10.30 10.30	... 10.30	... 10.30	... 10.30	... 10.30
Applied " ... ...	I.	9.30 9.30	... 9.30	... 9.30	... 9.30	... 9.30
" " ... ...	II.	10.30 10.30	... 10.30	... 10.30	... 10.30	... 10.30
Philosophy ... ... ...	II.	... 12.30	... 12.30	... 12.30	... 12.30	... 12.30
History ... ... ...	II. A	... 12.30	12.30 12.30	12.30 12.30	... 12.30	... 12.30
" ... ... ...	II. B	... 11.30	11.30 11.30	11.30 11.30	9.30 11.30	11.30 11.30

\* Winter and Spring Terms only.

## THIRD YEAR ARTS COURSES.

SUBJECT.	Course	Mon.	Tues.	Wed.	Thurs	Fri.
Latin	III.	...	3.30	...	3.30	3.30
"	IV.	4.30	...	2.30	...	...
Greek	III.	12.30	...	...	...	4.30
"	IV.	...	...	...	10.30	11.30
"	V.	...	...	...	...	...
"	VI.	4.30	12.30	...	4.30	...
English	III.	11.30	...	11.30	11.30	...
"	IV.	12.30	12.30	5.30	...	...
French	III.	2.30	10.30	...	...	10.30
"	IV.	1.30 2.30 3.30 4.30 ...	{ 9.30 11.30 ... 12.30 ...	...	1.30 4.30 ...	...
German	III.	4.30	4.30	...	4.30	...
"	IV.	{ 10.30 12.30 3.30	{ 10.30 13.30 ...	...	13.30 15.30	...
Anglo-Saxon	...	5.30	...	...	...	...
Pure Mathematics	III.	9.30	...	9.30	...	9.30
Applied	II.	10.30	...	10.30	...	10.30
Philosophy	III.			<i>By arrangement.</i>		
History	III.			<i>By arrangement.</i>		
Education	III.			<i>By arrangement.</i>		

# FACULTY OF SCIENCE.

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## Syllabuses of Courses.

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### MATHEMATICS.

*Professor* : R. S. HEATH, M.Sc.; M.A. (Cantab.), D.Sc. (Lond.), late Fellow of Trinity College, Cambridge.

*Lecturer* : C. T. PREECE, M.A. (Cantab.), late Scholar of Trinity College, Cambridge.

*Assistant Lecturers* : { S. B. McLAREN, M.A. (Cantab.).  
I. O. GRIFFITH, M.A. (Oxon.), Fellow of St. John's College, Oxford.

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### UNIVERSITY COURSES.

#### Pure Mathematics.

##### I.

Mondays and Fridays, from 12.30 to 1.30.

Tuesdays and Thursdays, from 11.30 to 12.30.

FEE :—£4 4s.

**ALGEBRA.**—Elementary properties of surds and imaginaries; simultaneous quadratics and equations like quadratics; theory of indices; theory and practical applications of logarithms; permutations and combinations; arithmetical and geometrical progressions, and other simple series; the binomial theorem for a positive integral exponent.

**TRIGONOMETRY.**—Trigonometrical ratios of acute angles; solution of right-angled triangles, and simple problems of heights and distances; circular measure of angles; length of arcs of circles; angles of any magnitude and sign; trigonometrical ratios of obtuse angles; sine, cosine, and tangent of the sum and difference of angles;

formulae for the ratios of the double angle, triple angle, and the half angle ; transformation of sums and differences of sines and cosines into products, and vice-versa ; properties of triangles ; solution of triangles ; problems on heights and distances ; the chief circles related to a triangle ; regular polygons ; areas of circles, sectors, and segments.

**GEOMETRY.**—The substance of Euclid, Book XI., 1—21, together with properties, areas of surface, and volumes of polyhedra, cylinders, cones, and spheres.

**ELEMENTARY ANALYTICAL GEOMETRY.**—Rectangular co-ordinates ; distance between two points ; areas of triangles and polygons ; the equation of loci ; intersection of loci ; the equation of the line joining two points ; the equation of the circle.

## II.

Mondays, Wednesdays, and Fridays, from 10.30 to 11.30.

FEE :—£4 4s.

**ALGEBRA.**—Theory of quadratic functions and quadratic fractions, their graphs and maxima and minima values ; the remainder and factor theorems of rational functions ; theory of rational and partial fractions ; the convergence and properties of the binomial, exponential and logarithmic series.

**TRIGONOMETRY.**—Inverse notation ; graphs of the trigonometrical functions ; theory of complex quantities ; Argand's diagram and de Moirve's theorem ; hyperbolic functions.

**SOLID GEOMETRY.**—The elementary properties of sections of a cone ; rectangular co-ordinates in three dimensions ; the equation of surfaces ; cylindrical surfaces ; the equations to places and lines ; the equation of the sphere.

**DIFFERENTIAL CALCULUS.**—Methods of differentiation ; Taylor's and Maclaurin's theorems ; theory of maxima and minima.

**INTEGRAL CALCULUS.**—Methods of integration ; calculation of curve lengths, areas and volumes by single integration.

*III.*

Mondays, Wednesdays, and Fridays, from 9.30 to 10.30.

FEE :—£4 4s.

**ANALYTICAL GEOMETRY** up to the elementary properties of the conic sections.

**DIFFERENTIAL CALCULUS.**—Tangents, normals, asymptotes, singularities of curves; tracing of curves; properties of special curves (including sine-curve, logarithmic curve, cycloids and catenary).

**INTEGRAL CALCULUS.**—Formulæ of reduction; differentiation and integration of an integral with regard to constants; properties of special curves; double and triple integration.

**DIFFERENTIAL EQUATIONS.**—Standard forms; singular solutions; linear and homogeneous equations with constant coefficients; special equations commonly occurring in dynamical and physical problems.

*IV.*

Mondays, Wednesdays, and Fridays, from 9.30 to 10.30.

FEE :—£4 4s.

**ANALYTICAL GEOMETRY** of three dimensions.

**HIGHER DIFFERENTIAL EQUATIONS.**

## Applied Mathematics.

*I.*

Mondays, Wednesdays, and Fridays, from 9.30 to 10.30; or Tuesdays and Thursdays, from 10.30 to 11.30; and Saturdays, from 9.30 to 10.30.

FEE :—£4 4s.

**STATICS.**—The theory of the composition and resolution of forces; the theory of moments; parallel forces and couples; equilibrium of bodies under the action of

forces in one plane ; force-diagrams and link-polygons, centres of gravity ; the simpler machines, balances; pulleys, screw-jacks, &c. ; friction and its effects in the working of machines ; theory of work and efficiency of machines ; statics of jointed frame-works.

**DYNAMICS.**—Definition, measurement, and properties of velocities and accelerations ; measurement of momentum and force ; work and energy ; motion of a body under the action of a force which is constant in magnitude and direction, including the motion of projectiles ; theory of impacts ; uniform circular motion ; harmonic oscillations ; the simple pendulum ; theory of dimensions of dynamical quantities ; change of units.

**HYDROSTATICS.**—Equilibrium of liquids under the action of gravity ; pressures of liquids on plane areas and on solid bodies, partially or wholly immersed ; Boyle's and Charles' laws of gases ; hydrostatic machines, such as presses, barometers, pumps, &c.

## II.

Mondays, Wednesdays, and Fridays, from 10.30 to 11.30.

FEE :—£4 4s.

**STATICS.**—Continuation of the subjects of the Course I. and more difficult applications ; application of integral calculus to the determination of centres of gravities ; stability ; equilibrium of strings ; small curvatures of flexible beams.

**DYNAMICS OF A PARTICLE.**—Application of differential and integral calculus to the measurement of velocities and accelerations ; motion of chains under the action of gravity ; motion under central forces ; motions of particles on fixed curves.

**RIGID DYNAMICS.**—Moments of inertia ; motion of a rigid body about a fixed axis ; theory of impacts and centres of percussion ; theory of angular momentum and kinetic energy ; motions of bodies in two dimensions under the action of given forces.

**HYDROSTATICS.**—Metacentres, stability and small oscillations of floating bodies.

For Vacation Reading, see p. 421.

*REQUIREMENTS FOR DEGREES.**Intermediate Examinations in Science and Arts* —

## Course I.

*B.Sc. Degree* :—

- (i.) Mathematics as a Principal Subject :—

Courses II. and III. in Pure and Courses I. and II. in Applied Mathematics.

- (ii.) Mathematics as a Subsidiary Subject :—

One of the following combinations :

(a) Courses II. and III. in Pure Mathematics.

(b) Courses I. and II. in Applied Mathematics (for students who know sufficient pure mathematics).

(c) Course II. in Pure and Course I. in Applied Mathematics.

*B.A. Degree* :—

- (i.) (When Mathematics is taken for two years). The same combinations as for Subsidiary Mathematics for B.Sc. Degree.

- (ii.) (When taken for one year only). Course II. in Pure Mathematics or Course I. in Applied Mathematics.

TIME TABLE.

MATHEMATICS.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
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PURE—						
Course I. ...	12.30	11.30	...	11.30	12.30	...
„ II. ...	10.30	...	10.30	...	10.30	...
„ III....	9.30	...	9.30	...	9.30	...
„ IV. ...	9.30	...	9.30	...	9.30	...
<hr/>						
APPLIED—						
Course I. A } ...	9.30	...	9.30	...	9.30	...
B } ...		10.30	...	10.30	...	9.30
„ II. ...	10.30	...	10.30	...	10.30	...

## PHYSICS.

*Professor* : J. H. POYNTING, M.Sc. ; Sc.D. (Cantab.),  
Hon. D.Sc. (Vict.), F.R.S., late Fellow of Trinity  
College, Cambridge.

*Lecturer* : G. A. SHAKESPEAR, B.A. (Cantab.),  
B.A., B.Sc. (Lond.).

*Assistant* : { G. BARLOW, D.Sc. (Lond. and Wales).  
*Lecturers* : { A. D. DENNING, M.Sc. ; Ph.D. (Heid.).

*Special Lecturer on Experimental Physics* :  
G. A. SHAKESPEAR, B.A., B.Sc.

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### INTRODUCTION.

All First Year Undergraduates in Pure Science, in Applied Science (including Engineering, Metallurgy, and Mining) and in Medicine, are required to take Course I., which includes three lectures and two hours laboratory weekly.

Undergraduates who, having passed the Intermediate Examination in Science, select Physics as a subject for their degree, may take it as a Single Subsidiary, as a Double Subsidiary, or as a Principal Subject. The following are the courses in the different cases :—

*Single Subsidiary* : Course II., which includes three lectures weekly, and six hours laboratory weekly for one session.

*Double Subsidiary* : Course II. and six hours laboratory weekly in the second year. Course III., which includes three lectures weekly, and six hours laboratory weekly in the third year.

*Principal* : Course II. and nine hours laboratory weekly in the second year. Course III. and twelve hours laboratory weekly in the third year.

The lectures and laboratory are open to all students who are qualified to take them, whether they are Undergraduates or not.

## UNIVERSITY COURSES.

## I.

For First Year Undergraduates in Pure Science, Applied Science, and Medicine.

*Lecture Hours.*—Mondays, Wednesdays, and Fridays, from 11.30 to 12.30.

*Practical Class.*—Mondays, 3 to 5, or Wednesdays, 9.30 to 11.30, or Fridays, 3 to 5.

*For Text Books and Vacation Reading see page 421.*

FEE:—£5 15s. 6d.

Position, Velocity, and Acceleration always relative to a standard. Effect of change of standard. Resolution and Composition of Velocities and Accelerations. Uniform Motion in a circle. Conical Pendulum. Determination of  $g$ . Gravitation. Dimensions and Mass of the Earth.

**PROPERTIES OF MATTER.**—*Solids*: Sticking and sliding friction. Strains and Stresses. Bulk Strain and Shear Strain. Various kinds of permanent change of shape and rupture. Crystalline and Amorphous Solids. *Liquids*: Viscosity. Compressibility. Surface Tension. *Gases*: Compressibility. Viscosity. Kinetic Theory of Matter. Diffusion. Solution. Osmotic Pressure.

**HEAT.**—Temperature. Mercury - in - glass thermometer. Determinations of high and low temperatures. Expansion of solids and liquids. Circulation and Convection in Liquids. Expansion of gases at constant pressure and increase of pressure at constant volume. Gas thermometer. Circulation and Convection in gases. Movements of the Atmosphere. Quantity of Heat. Specific Heat and simple methods of measuring it. Conduction of Heat. Conductivity. Heat a form of Energy. The forms of Energy and their transformations according to fixed rates of exchange. The Conservation of Energy. Methods of determining the Mechanical Equivalent of Heat. The nature of Heat on the Kinetic Theory of Matter. Limitation in the amount of heat which can be transformed to work. Change of State. Latent Heat. Liquid-Vapour Change. Evaporation. Boiling. Vapour Pressure. Dependence of boiling point on Pressure, and explanation. Modes of measuring Vapour Pressure. Explanation of

Vapour Pressure on the Kinetic Theory. Water Vapour in the Atmosphere. Hygrometers. Cloud. Fog. Dew. Solid-Liquid Change. Melting Point. Change of volume on melting. Effect of pressure on Melting Point. Regelation. Radiation. High and Low Radiating and Absorbing Powers. Comparison of properties of radiation from hot bodies and properties of light. Identification. The Spectrum. Substances absorb the radiations which they can emit. Dark lines in Solar and Stellar Spectra.

**LIGHT.**—Light a form of Energy. Rectilinear Propagation Shadows. Eclipses. Inverse Square Law. Simple Photometers. Reflection. Refraction and Dispersion. Velocity of Light. Light a form of Wave Motion. Illustrations of Interference. The Diffraction Grating. Polarisation of Light. Mirrors. Prisms. Lenses. The Eye. Simple forms of Telescope and Microscope.

**SOUND.**—Sound arises from vibrating sources which send out longitudinal waves in air. Characteristics of the waves, corresponding to Loudness, Pitch and Quality. Velocity of Sound in air, and other media. Determinations of Frequency. Resonance. Its use to analyse sounds. Harmonics and Upper Partials. Quality. Transverse Vibrations of Strings. Vibrations of air in Pipes. Other vibrating sources. Beats. Concord and Discord. Combination Tones.

**MAGNETISM.**—Properties of Magnets. The two poles, their equality and inseparability. Magnetisation by Induction. Methods of making Magnets. Inverse Square Law. Magnetic Fields and Lines of Force. Strength of Poles and Moments of Magnets. The Earth as a Magnet. Declination, Dip and Intensity. Magnetic Properties of different substances. Temperature and Magnetic Qualities.

**ELECTRICITY.**—The two kinds of Electrification and simple modes of producing them. Conductors and Insulators. The Gold Leaf Electroscope. Electrification by Induction. Frictional Electrical Machines. The Electro-  
phorus. The Wimshurst Machine. The Leyden Jar. Production and Disappearance of the two Electrifications, always in equal quantities. The Electric Field considered as the seat of Electric Strain, Electric Forces, and Electric Energy, respectively. The Inverse Square Law. The Unit of Charge. Potential, Capacity, and Energy of Charge. Electrometers. The effect of the medium. Specific Inductive Capacity.

ELECTRO-MAGNETISM.—Electric Discharge and the Magnetic Effects accompanying it. Electro-magnetic Waves. Electric Current. Voltaic and Storage Cells. The Magnetic Properties of the Current Circuit. The Ampère. Galvanometers and Ampère Meters. The Forces on Current Circuits in a Magnetic Field. Electric Motors. Ohm's Law. Resistance. The Heat developed in the Circuit. Joule's Law. The Ohm. The Volt. Electrolysis. Electro-chemical equivalents. Thermo-electricity. The Induction of Currents. Lenz's Law and Faraday's Law. The Dynamo. The Induction Coil. The Transformer.

NOTE.—Every member of the class is required to have a slide rule for calculations. Slide rules, price from 3s. 6d. each, may be obtained in the Laboratory.

### II.

Lectures on Elementary Mathematical Physics for all Undergraduates taking Physics as a subject for a degree.

*Lecture Hours.*—Mondays, Wednesdays, and Fridays, from 11.30 to 12.30.

FEE for Lectures :—£3 13s. 6d.

*Laboratory Hours.*—Six hours weekly if Physics is a Subsidiary Subject, nine hours weekly if it is a Principal Subject, at times to be arranged.

FEE :—Six hours weekly, £6 6s. ; nine hours weekly, £7 17s. 6d.

For Text Books and for Vacation Reading see page 421.

The lectures will be on such parts of the following syllabus as can be dealt with in the time. The laboratory work extends over the whole range.

MECHANICS.—Simple Harmonic Motion. Simple Pendulum. Motion of a body round a fixed Axis. Compound Pendulum. Methods of determining relative and absolute values of  $g$ . Gravitation. Methods of determining  $g$ .

**PROPERTIES OF MATTER.**—*Solids*: Friction. Moduli of Elasticity and methods of determining them.—*Liquids*: Viscosity. Bulk Modulus of Elasticity. Surface Tension. *Gases*: Viscosity. Compressibility. Kinetic Theory of Gases. Molecular Dimensions.

**HEAT.**—The Laws of Thermodynamics. Absolute Scale of Temperature. Volume-pressure and Entropy-temperature Diagrams and their use. Solution. Osmotic Pressure. Exact Measurements in Heat.

**MAGNETISM AND ELECTRICITY.**—General propositions with regard to an inverse square field of force. *Magnetism*: Magnetic Measurements. The Earth's Field. Paramagnetism and Diamagnetism. Theory of the Magnetic Field. *Electricity*: Theory of the Electric Field. Electric Measurements. *Electro-magnetism*: Electric Discharge. Magnetic Properties of Current Circuits. Heating Effects. Chemical Effects. Thermo-electricity, Current Induction. Electro-magnetic Measurements. Theory of the Electro-magnetic Field.

**OPTICS.**—At the beginning of the Spring Term, all second year laboratory students will be expected to read the Geometrical Optics in Edser's *Light*, and to perform a series of illustrative experiments in the laboratory.

### III.

Lectures during the Winter and Spring Terms on any parts of the syllabus of Course II. not dealt with in the previous Session and on the syllabus below. The work is more advanced than that of Course II. Lectures will also be given on Methods of Experiment. Members of the Class will be required to write essays on Physical Subjects, to be read to and discussed by the Class.

**MECHANICS.**—Some problems in Mechanics.

**SOUND.**—Nature of Sound Waves in Air. Velocity of Sound. Measurements of Frequency. Forced Vibrations. Analysis of Waves. Strings. Pipes. Maintenance of Vibrations. Interference of Sound Waves. Beats. Concord and Discord. Combination Tones.

**LIGHT.**—Systems of Thick Lenses. Wave Theory. Interference. Diffraction. Polarisation by Reflection and Refraction. General account of Polarisation by Crystals. Circular and Elliptic Polarisation. Rotation of Plane of Polarisation. Polarimeters.

*Lecture Hours.*—Mondays, 4 to 5, Tuesdays and Thursdays, 10.30 to 11.30.

FEE :—£3 3s.

*Laboratory Hours.*—Six hours weekly if Physics is a Double Subsidiary Subject, twelve hours weekly if it is a Principal Subject, at times to be arranged.

FEES :—Six hours weekly, £6 6s.; twelve hours weekly, £9 9s.

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#### CONFERENCE ON RECENT ADVANCES IN PHYSICS.

A conference will be held on Tuesdays, at 5.30, for members of the Staff, Graduates, and Advanced Students, at which recent work will be described and discussed.

Those who wish to join the Conference should consult the Professor.

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#### LABORATORY WORK FOR GRADUATES OR FOR STUDENTS DESIRING SPECIAL COURSES.

The Laboratory is open for purposes of Research or for Special Courses, from 10 to 1 and 2 to 5 daily, except Saturdays.

FEES :—Six hours weekly, £6 6s.; nine hours, £7 17s. 6d.; twelve hours, £9 9s.; each succeeding six hours, £2 2s.

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## TIME TABLE.

PHYSICS.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I.—Lecture ...	11.30	...	11.30	...	11.30
Laboratory ...	3.0	<i>or</i>	9.30	<i>or</i>	3.0
Course II.—Lecture ...	11.30	...	11.30	...	11.30
Laboratory...				<i>By arrangement.</i>	
Course III.—Lecture ...	4.0	10.30	...	10.30	...
Laboratory...				<i>By arrangement.</i>	
Conference ... ...	...		5.30	...	...

## CHEMISTRY.

*Professor :* PERCY F. FRANKLAND, M.Sc.; Ph.D., LL.D., F.R.S.

*Lecturers :* { ALEX. FINDLAY, M.A., D.Sc., Ph.D.  
HAMILTON McCOMBIE, M.A., B.Sc., Ph.D.,  
A.R.C.S., A.I.C.

*Demonstrators :* { C. K. TINKLER, B.Sc.  
THOMAS J. MURRAY, Ph.D.

*Special Lecturer on Physical Chemistry :*  
ALEX. FINDLAY, D.Sc.

## UNIVERSITY COURSES.

### I.

A. This part of the course is arranged (1) to give a full exposition of the general principles of Chemical Science, (2) for the systematic study of the properties of the more important elements and their compounds, and (3) to indicate some of the chief applications of Chemistry in the Arts and Manufactures.

Four hours weekly during the Winter and Spring Terms. Some of the above meetings of the class will be devoted to tutorial work. Attendance at this tutorial class is compulsory, as is the performance of the exercises set by the Professor.

*Lecture hours.*—9.30 to 10.30 a.m. on Mondays to Thursdays inclusive.

*FEE :—£4 4s.*

B. This part of the course includes an introduction to the study of Organic Chemistry, with a description of the properties, relations, and methods of preparation of the more important groups of Carbon-compounds.

Three hours weekly during the Summer Term.

*Lecture hours.*—9.30 to 10.30 a.m. on Mondays, Wednesdays, and Fridays.

**FEE :**—£1 11s. 6d.

In connection with these Courses, IA and IB, a Tutorial Class will be held during the Winter and Spring Terms on Mondays at 2 p.m. (Engineers), and on Fridays at 9.30 a.m. (all other students). In the Summer Term the class will meet by arrangement. Attendance at this class is compulsory, except in the case of students who have been exempted by the Professor.

No fee.

## II.

**A. Advanced Organic Chemistry.**—This course extends over two years, and is divided into two parts :—

- (i.) Carbon-compounds of the Fatty Series.
- (ii.) Aromatic and other Cyclic Compounds.

Only one of these parts will be taken in each year, The class meets twice weekly by arrangement during the Winter and Spring Terms.

**FEE for each part :**—£2 2s.

**B. General and Physical Chemistry.**—This course will extend over two years, during the first of which the following subjects will be discussed :—

Principles of scientific investigation. Induction and deduction. Laws, hypotheses and theories.

The fundamental laws and theories of chemistry.

**PROPERTIES OF GASES :** Laws of Boyle and of Gay-Lussac ; Avogadro's hypothesis ; determination of the density of gases and of molecular weights ; kinetic theory of gases ; specific heat of gases ; spectrum analysis.

**PROPERTIES OF LIQUIDS :** Vaporisation and liquefaction ; heat of vaporisation and Trouton's rule ; critical phenomena ; theory of Van der Waals ; refractivity and dispersivity ; optical activity ; density and specific volume ; surface tension ; viscosity ; dielectric constant.

**PROPERTIES OF SOLIDS:** Amorphous and crystalline condition; specific heat; sublimation; fusion and solidification; superfusion and velocity of crystallisation; isomorphism and polymorphism.

**SOLUTIONS:** General definition; vapour pressure of liquid solutions; fractional distillation.

**DILUTE SOLUTIONS.—I.** *Non-electrolytes.*—Osmotic pressure; Van't Hoff's theory; freezing point and boiling point of dilute solutions; determination of molecular weights in solution.

**DILUTE SOLUTIONS.—II.** *Electrolytes.*—General properties as distinguished from solutions of non-electrolytes.

**ELECTRO-CHEMISTRY.—I.** Electrolytic conduction; theory of ionisation; transport numbers; mobility of ions, and ionic conductivities; relations between chemical constitution and conductivity; complexions.

**CHEMICAL DYNAMICS.—I.** *Reaction velocity and equilibria in homogeneous systems.* Law of mass action; the order of a chemical reaction and its significance. Equilibria in homogeneous gas and liquid systems; equilibria in solutions of electrolytes; affinity constants of acids and bases; avidity; hydrolytic dissociation; solubility product; distribution of a substance between two solvents.

Students attending the above course, or the following course, III. C on Physical Chemistry, are urgently recommended to make themselves acquainted with at least the rudiments of the differential and integral calculus. For this purpose they may read Edser's Introduction to the Differential and Integral Calculus, or certain portions of Mellor's Higher Mathematics for Students of Chemistry and Physics. Advice on this point may be received from the Lecturer.

The class meets once weekly by arrangement during the Winter and Spring, and twice weekly during the Summer Term.

**FEE:—£1 11s. 6d.**

*III.*

A. *Advanced Organic Chemistry*.—Part (i.) or (ii.) of Course II. A.

The Class meets two hours weekly by arrangement during the Winter and Spring Terms.

FEE :—£2 2s.

B. *Advanced Organic Chemistry*.—Lectures on special subjects attracting attention at the time will be delivered during the Winter, Spring and Summer Terms.

The class meets once weekly.

FEE :—£1 1s.

C. *General and Physical Chemistry*. (Continuation of Course II. B.)

**THERMO-CHEMISTRY**.—I. Heat of reaction, solution, combustion, neutralisation. Laws of maximum work, thermo-neutrality, and constant heat summation.

**THERMO-CHEMISTRY**.—II. The laws of thermo-dynamics, and their applications in chemistry and electro-chemistry.

**ELECTRO-CHEMISTRY**.—II. Relation between chemical and electrical energy. Concentration cells. Electrode potentials. Polarisation. Decomposition potentials. Electrolytic deposition and separation of metals.

**RADIO-CHEMISTRY**: Phenomena of radio-activity and their interpretation.

**CHEMICAL DYNAMICS**.—II. *Equilibria in heterogeneous systems*. General discussion of the conditions of equilibrium in systems of one, two, three, and four components, from the point of view of the Phase Rule.

The class meets once weekly by arrangement during the Winter, Spring and Summer Terms.

FEE :—£1 1s.

*SPECIAL COURSES ON ELECTRO-CHEMISTRY.*

BY DR. ALEX. FINDLAY.

Should a sufficient number desire it, courses in theoretical and practical Electro-chemistry will be arranged during the Session.

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**Practical Chemistry.***I.*

Not less than nine hours weekly during the three terms must be devoted to Laboratory work.

The Course will include :—

Preparation of pure substances, gaseous, liquid, and solid.

Experiments illustrating the laws of combination.

Simple qualitative analysis, simple gravimetric and volumetric determinations.

*II.*

Not less than fifteen hours weekly during the three terms must be devoted to Laboratory work.

The Course will include :—

Advanced qualitative and quantitative analysis.

Simple organic preparations.

*III.*

Not less than fifteen hours weekly during the three terms must be devoted to Laboratory work.

The Course will include :—

Gas analysis, molecular weight, and other physical determinations.

Advanced organic preparations and identification of organic compounds.

## LABORATORY PRACTICE.

The Laboratory will be open daily from 9.30 to 5, except on Saturdays, when it will be closed at 1 p.m.

Each student will pursue an independent Course of study to be determined after consultation with the Professor. He will be guided in his operations by the Professor or his Assistants.

**TEXT BOOKS.**—NEWTH'S *Manual of Chemical Analysis, Qualitative and Quantitative* (Longmans); FRESENIUS' *Quantitative Analysis* (Churchill); SUTTON'S *Volumetric Analysis* (Churchill); COHEN'S *Practical Organic Chemistry*; GATTERMANN'S *Practical Methods of Organic Chemistry*; ELBS' *Electrolytic Preparations*; SMITH'S *Electro-chemical Analysis*; OSTWALD'S *Physical Chemical Measurements*.

FEES :—	All day.	Three hours per day.	Three hours per day; five days a week.	Three hours per day; three days a week.
	Guineas.	Guineas	Guineas.	Guineas.
One Term	... 7	4½	4	2½
Two Terms	... 13	8½	7½	5
Three Terms	... 18	12	11	6½

Each student will be required to provide himself with a set of simple apparatus, the total cost of which need not exceed 30s.

Gas, water, and all ordinary reagents (except methylated spirit, ether, chloroform, silver nitrate and platinum perchloride) are supplied by the University, and the larger forms of apparatus may be obtained on loan from the Laboratory store, on condition that breakages are made good.

Some of the special chemicals required for organic preparations have to be purchased by the Student.

Some additional Apparatus will also be required by each student on commencing QUANTITATIVE ANALYSIS AND ORGANIC PREPARATIONS.

Special arrangements are made by the Professor for students pursuing Research.

**SPECIAL CLASS.***For Laboratory Students.*

A special class on the Metals and Theoretical Foundations of Analytical Chemistry is held during the Winter and Spring Terms on Fridays at 9.30 a.m. (Engineers). and on Mondays at 2 p.m. (all other students). The class meets during the Summer Term by arrangement. Attendance is compulsory for first-year students.

No Fee.

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**Chemical Library.**

The departmental library, adjoining the Laboratories, is open for the use of Students during working hours, subject to the rules prescribed by the Professor.

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**University Chemical Society.**

The Society meets on alternate Mondays at 5.30 p.m., during the Winter and Spring Terms, for the reading and discussion of papers.

All Students are eligible for membership.

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**EXCURSIONS.**

During previous Sessions permission has been obtained to visit some of the great factories in and near Birmingham, in which chemical and metallurgical industries are carried on. Students have thus had most valuable opportunities of gaining a practical acquaintance with some branches of Applied Science. The privilege thus courteously granted by several manufacturers will, it is hoped, be enjoyed in every future Session. The excursions will be conducted by the Professor.

For Vacation Reading, see p. 422.

*REQUIREMENTS FOR DEGREES.**Intermediate Examination in Science :--*

- Lectures, Course I. (A. and B.)  
Laboratory, Course I.

*B.Sc. Degree :--*

- (i.) Chemistry as a principal subject :  
Lectures, Courses II. and III.  
Laboratory, Courses II. and III.
- (ii.) Chemistry as a subsidiary subject :  
One of the following combinations :  
(a) Lecture Courses II. and III. in Organic Chemistry, in successive years, with not less than fifteen hours weekly in the Laboratory during one Session.  
(b) Lecture Courses II. and III. in General and Physical Chemistry, with not less than fifteen hours weekly in the Laboratory during three terms.

*B.A. Degree :--*

- Lecture Course I., with not less than nine hours' Laboratory work weekly.
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## TIME TABLE.

CHEMISTRY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I. (A.)*	... 9.30	9.30	9.30	9.30	...
Course I. (A.)* (Tutorial)	†2.0	...	...	...	9.30
Course I. (Metals, &c.)...	2.0	...	...	...	†9.30
Course I. (B.)†	... 9.30	...	9.30	...	9.30
Course I. (B.)† (Tutorial)	...	<i>By arrangement.</i>			...
Course II.	... ...	}	<i>By arrangement.</i>		
Course III.	... ...		<i>By arrangement.</i>		

\*Winter and Spring Terms.      †Summer Term.

†Engineers only.

*Manufacturers or Managers of Works having vacancies are requested to apply to the Professor.*

## ZOOLOGY AND COMPARATIVE ANATOMY.

*Professor* : T. W. BRIDGE, M.Sc. ; Sc.D. (Cantab.), F.R.S.

*Lecturer* : LEONARD DONCASTER, M.A. (Cantab.).

*Special Lecturer in Economic Zoology* :

W. E. COLLINGE, M.Sc.

*Museum Assistant* : F. W. CRISPE.

### PRELIMINARY COURSE.

Lecture days and hours to be fixed by arrangement with the class, which will meet on the first Saturday of the Winter Term, at 11.30.

A course of about twenty lectures on Animal Biology, with practical demonstrations, will be given during the Session. The course will meet the requirements of Matriculation Candidates who desire to take Animal Biology as one of their optional subjects, and may also be taken by Normal students as a Science subject.

FEE : £1 11s. 6d.

#### Syllabus.

- (1) Distinctive properties of living matter or protoplasm, as illustrated by the structure and mode of life of the Proteus-animalcule or *Amœba*. Differences between Animals and Plants. The nature of the Cell.
- (2) The general structure of the Frog. Elementary physiology of the Frog. The organs of digestion and their use. The nature of blood. The structure of the heart, and the arrangement of the more important blood vessels. The use of a circulatory system. The nature of excretory organs. Mode of breathing. The kidneys and their use.
- (3) The more important facts in the structure and habits of the freshwater Polype (*Hydra*) ; and the Earthworm (*Lumbricus*) ; and the Crayfish (*Astacus*).
- (4) Methods of reproduction in animals. The egg-cell and the sperm-cell. Fertilization of the egg. Segmentation of the fertilized egg. The metamorphosis of the Frog, treated in an elementary fashion.

## UNIVERSITY COURSES.

## I.

*Lecture Days* :—Tuesdays and Thursdays, at 12.30.  
A course of about fifty lectures on Elementary Zoology.

- A. Living and non-living matter. Distinctive properties of living matter or protoplasm, as illustrated by the study of the Proteus-animalcule or *Amœba*. Distinction between Animals and Plants. Comparison of the unicellular *Amœba* with the complex multicellular Frog-Origin of the Frog. The egg-cell or ovum. Segmentation of the ovum, and the subsequent formation of physiologically different groups of cells or tissues. Structure of the various elementary tissues of the Frog. Epithelia, connective, muscular, and nervous tissues. The combination of tissues to form organs.
- B. The anatomy and histology of the various systems of organs in the Frog, and the elementary physiology of the organs of digestion, circulation, and excretion. Physiological division of labour and morphological differentiation of structure.
- C. This part of the course will treat of the structure of the following typical animals, viewed from a comparative standpoint :—  
The Proteus-animalcule (*Amœba*), the Bell-animalcule (*Vorticella*), the freshwater Polype (*Hydra*), the Earthworm (*Lumbricus*), the Crayfish (*Astacus*), the Dog-fish (*Scyllium*), the Frog (*Rana*), and the general structure of the Rabbit (*Lepus*).
- D. The concluding lectures of the course will deal with the phenomena of Reproduction. Asexual and Sexual Reproduction. Ova and Spermatozoa. Spermatogenesis. Fertilization and segmentation of the ovum in *Amphioxus* and *Rana*. The development and larval history of the Frog, treated in an elementary fashion.

## Practical Class.

In the Practical Class, which will be conducted in connexion with this course, the above-mentioned animal types will be dissected or microscopically examined.

*Laboratory* :—Tuesday afternoon, from 2.15 to 4.30, in Winter and Spring Terms, and on Tuesday and Thursday afternoons during the Summer Term.

FEE : For lecture and laboratory courses, £3 3s.

### II.

*Lecture Days* :—Mondays, Wednesdays, and Fridays, at 12.30, or at such times as may be fixed by arrangement with the class.

The course will include a more or less detailed description of the Morphology and Embryology of selected examples of certain of the principal groups of animals, and of the more important modifications of structure which are met within the limits of each group. The Phylogenetic relations of each group will also be discussed, as well as the more elementary facts of its Geographical Distribution and Bionomics.

### SYLLABUS OF GROUPS AND TYPICAL EXAMPLES.

#### PHyla.

#### EXAMPLES.

#### Protozoa.

(i.) Rhizopoda .....	<i>Amœba, Gromia, Miliola,</i> <i>Globigerina, Actinophrys,</i> <i>Thalassicolla.</i>
(ii.) Mycetozoa .....	<i>Fuligo.</i>
(iii.) Sporozoa .....	<i>Monocystis, Coccidium.</i>
(iv.) Mastigophora .....	<i>Monas, Codosiga, Ceratium,</i> <i>Noctiluca.</i>
(v.) Ciliata .....	<i>Paramecium, Stentor.</i>
(vi.) Acinetaria .....	<i>Acineta, Dendrosoma.</i>

#### Porifera.

(i.) Calcarea .....	<i>Clathrina, Leucosolenia.</i>
(ii.) Non-calcarea .....	<i>Euspongia.</i>

**Cœlenterata.**

- (i.) Hydrozoa ..... *Tubularia, Obelia, Carmarina, Physophora, Millepora.*
- (ii.) Scyphozoa ..... *Aurelia.*
- (iii.) Anthozoa—
  - (a) Alcyonaria ... *Alcyonium, Gorgonia.*
  - (b) Zoantharia ... *Actinia, Edwardsia, Flabellum, Madrepora.*
- (iv.) Ctenophora ..... *Pleurobrachia, Ctenoplana.*

**Platyhelminthes.**

- (i.) Turbellaria ..... *Convoluta, Polycelis, Dendrocaelum, Leptoplana.*
- (ii.) Trematoda ..... *Distomum.*
- (iii.) Cestoda ..... *Amphilina, Tænia.*

**Nemertini** ..... *Carinella, Cerebratulus.*

**Annelida.**

- (i.) Archiannelida ..... *Polygordius.*
- (ii.) Chaetopoda ..... *Nereis, Lumbricus.*
- (iii.) Hirudinea ..... *Hirudo.*

**Polyzoa.**

- (i.) Entoprocta ..... *Loxosoma.*
- (ii.) Ectoprocta ..... *Bugula.*

**Brachiopoda** ..... *Lingula, Waldheimia.*

**Mollusca.**

- (i.) Amphineura ..... *Chiton, Neomenia.*
- (ii.) Gastropoda ..... *Patella, Haliotis, Buccinum.*
- (iii.) Scaphopoda ..... *Dentalium.*
- (iv.) Cephalopoda ..... *Nautilus, Sepia.*
- (v.) Pelecypoda ..... *Nucula Mytilus, Anodonta.*

**Arthropoda.**

- (i.) Crustacea ..... *Apus, Daphnia, Cyclops, Lepas, Nebalia, Astacus.*
- (ii.) Arachnida ..... *Limulus, Scorpio.*
- (iii.) Onychophora ..... *Peripatus.*
- (iv.) Myriapoda ..... *Scolopendra, Julus.*
- (v.) Insecta ..... *Periplaneta.*

**Echinoderma.**

- (i.) Crinoidea ..... *Antedon.*
- (ii.) Holothuroidea ..... *Holothuria.*
- (iii.) Stelleroidea ..... *Asterias, Ophiura.*
- (iv.) Echinoidea ..... *Echinus.*

**Chordata.**

- (i.) Hemichorda..... *Balanoglossus.*
  - (ii.) Urochorda ..... *Appendicularia, Ascidia, Pyrosoma, Salpa.*
  - (iii.) Cephalochorda ..... *Amphioxus.*
  - (iv.) Craniata [Vertebrata]
    - (a) Cyclostomata... *Petromyzon, Myxine.*
    - (b) Pisces ..... *Scyllium, Chimaera, Polypterus, Gadus, Ceratodus.*
    - (c) Amphibia ..... *Rana, Triton.*
    - (d) Reptilia ..... *Lacerta, Sphenodon, Chelone, Boa, Crocodilus.*
    - (e) Aves ..... *Struthio, Columba.*
    - (f) Mammalia ..... *Echidna, Macropus, Lepus.*
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**Laboratory Course.**

In the practical class, which will be conducted in connexion with this course, a selection of the above-mentioned animal types will be dissected and microscopically examined.

**FEE : For Lectures and Laboratory Course, £6 6s.**

**III.**

The course for Third Year Students will consist mainly of Laboratory (at least eight hours weekly) and Museum work, but occasional lectures on special aspects of the subject will be given at times to be fixed by arrangement with the class.

In addition to occasional lectures, two short lecture courses will be given by Mr. Doncaster during the Session (1) on the structure and Bionomics of the lower Chordata (Hemichorda, Urochorda, and Cephalochorda), and (2) on the Geographical Distribution of Animals.

**FEE : Lectures and Laboratory, £8 8s.**

### Zoological Laboratory.

The Laboratory will be open daily, from 10 to 5 (Saturdays 10 to 1). In addition to students taking up practical work in connection with the various lecture courses, the Laboratory will be open to all who may desire to engage in any special course of practical work, or to pursue original investigations, with a view to the requirements for the higher University Degrees of M.Sc. and D.Sc.

LABORATORY FEE : £3 3s. per term.

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### Zoological Museum.

The Museum includes a representative series of animals illustrating the principal divisions of the Animal Kingdom. In addition, there are also special collections which have been presented to the Museum at different times, among which may be mentioned the Archer Collection of Shells ; the Hunter Barron series of Land and Fresh-water Shells ; the Williams Collection of British Birds' Eggs ; and the Pickard Cambridge Collection of British Spiders.

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### The Port Erin Biological Laboratory.

The Council of the University makes an annual grant to the Marine Biological Laboratory at Port Erin, in the Isle of Man, in return for which one of the tables in the Laboratory is reserved solely for the free use of those students in the Zoological Department of the University who wish to study Marine Zoology, or pursue some branch of research. During the occupation of the table each worker will be entitled to the use of microscopes, re-agents, including a specified allowance of methylated spirit, and other apparatus, and of the boats, dredges, tow nets belonging to the laboratory, so far as is compatible with the claims of other workers and with the routine work of the station.

Facilities will also be given to workers to make their own collections of marine organisms.

Students wishing to avail themselves of the privilege are requested to apply to Professor Bridge, from whom further information may be obtained.

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### Vacation Reading.

For a list of books suggested, see page 422.

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### REQUIREMENTS FOR DEGREES.

*Intermediate Examinations in Science and in Arts :—*  
Course I. in the first year.

*B.Sc. Degree :—*

- I. Zoology as a Subsidiary Subject : Course II. in the second year.
- II. Zoology as a Principal Subject : Course II. in the second year, and Course III. in the third year.

*B.A. Degree :—*Course II.

*M.Sc., D.Sc.*—Students who have taken the degree of B.Sc., and who desire to proceed to the higher University degrees of M.Sc. and D.Sc., may confer with the Professor as to the choice of a subject for the thesis (M.Sc.), or for original research (D.Sc.).

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## TIME TABLE.

ZOOLOGY.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Preliminary	...				<i>To be arranged.</i>	
Course I....	...	...	12.30	...	12.30	...
Course II.	...	12.30	...	12.30	...	12.30
Course III.	...				<i>By arrangement.</i>	
Laboratory	...				Daily from 10 to 5.	

## ECONOMIC ZOOLOGY.

*Special Lecturer : WALTER E. COLLINGE, M.Sc., F.E.S.*

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The Laboratory and Office of the Department are situated at 55, Newhall Street.

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This Department was established for the purpose of providing a consultative and experimental research laboratory in connection with Economic Zoology.

It will provide Farmers, Fruit Growers, Stock Breeders, Nurserymen, Market Gardeners, and others with information relating to the various animals, injurious or beneficial to crops, live stock, etc. So far as the facilities of the Department's Laboratory permit, determinations will be made of the organisms causing any particular trouble, and definite instructions as to the treatment to be followed will at all times be furnished to those desiring assistance.

Agriculturists and horticulturists can receive information relative to insect and other pests and parasites. Public bodies having the care and maintenance of public parks, gardens, lakes, and reservoirs, etc., can receive information as to pests to ornamental trees, timber, etc., the character and quantity of microscopical animals in any particular water, etc.

Inspections will be made of crops, orchards, etc., in any part of the Midland Counties, so far as the routine work of the Department will permit; and Mr. Collinge will be pleased to advise or confer with the Agricultural Committees of the County Councils, Chambers of Agriculture, Farmers', Horticulturists', and Gardeners' Associations, etc., or to attend the meetings of these bodies when subjects relating to Economic Zoology are being discussed.

### Research Laboratory and Museum.

These will be opened daily from 10 to 5 (Saturdays 10 to 1); and facilities will be given to a few students who desire to engage in any special course of practical work, or to pursue original investigations under the direction of Mr. Collinge, to whom applications should be made.

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### The Museum.

Amongst other collections, the Museum is particularly rich in specimens illustrating the destruction of timber trees and timber by various animals, and specimens of the parasites of farm live stock.

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### LECTURES.

#### Special Evening Course.

During the Spring Term a Course of Evening Lectures entitled

“Insect Pests of the House”  
will be delivered.

The Course will treat of the common household pests attacking food, clothes, furniture, books, etc. A detailed syllabus will be issued early in January, 1908.

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#### Lectures to Farmers, Fruit Growers, &c.

Mr. Collinge will be pleased to lecture before the members of Associations of Fruit Growers, Farmers' Clubs, Gardeners' Associations, etc., in so far as his engagements permit.

The following are titles of some of the lectures :—

Insects Useful and Injurious.

Insects Injurious to Fruit Trees.

“	“	Vegetables.
”	”	Root Crops.
”	”	Cereals.
”	”	Hops.

- Green Flies and Snow Flies.  
Scale Insects.  
Ticks and Disease.  
Animal Parasites.  
Sheep Scab and Allied Diseases.  
Parasites injurious to Live Stock.  
Insects injurious to Timber.  
Insect Parasites of Insects.  
Beneficial and Injurious Wild Birds.  
The Black Currant Gall-Mite.
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#### Publications.

Reports and circulars treating of the life-history of various injurious insects, etc., together with suggestions for preventive and remedial measures, are issued from time to time, and will be forwarded post-free to farmers, fruit growers, etc., in the counties of Derby, Hereford, Leicester, Rutland, Shropshire, Stafford, Warwick, and Worcester.

Application should be made by letter in the first instance stating the particular crops or branch of agriculture the applicant is interested in. Such names will be placed upon the Department's Register to receive future Reports.

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## BOTANY AND VEGETABLE PHYSIOLOGY.

*Professor : W. HILLHOUSE, M.Sc.; M.A. (Cantab.), F.L.S.  
Lecturer and Demonstrator : GEORGE S. WEST, M.A.  
(Cantab.), A.R.C.S., F.L.S.*

### UNIVERSITY COURSES.

#### I.

#### (VEGETABLE BIOLOGY.)

*Lecture Days.*—Mondays and Fridays at 4, excluding Fridays in the Summer Term. For the convenience of Students in the Faculty of Arts the Monday Lectures will be repeated on Wednesdays, at 11.

*Laboratory.*—The course will be illustrated by practical work in Morphology, external and internal, and Physiological experiments, at the following *alternative* times, viz., in the Winter and Spring Terms, Tuesdays 2.30 to 5, Thursdays 2.30 to 5.0, or Saturdays 10.30 to 1; in the Summer Term, Fridays 2.30 to 5, or Saturdays 10.30 to 1. Some of these laboratory periods, especially those in the Summer Term, will be spent in the Experiment House at the Botanical Gardens, Edgbaston.

FEE : Lectures and Laboratory, £3 3s.

The morphology of the Seed ; Germination ; the external morphology of the Seedling. The physiology of germination ; the general nature of the reserve food-stuffs ; the relations of the seedling with external conditions and natural forces ; the theory of Irritability. Growth to exhaustion, and the general conditions of active life and self-nutrition.

The general morphology of the Plant Body, and the principal modifications in form and distribution of the vegetative members, Root, Shoot, and Leaf.

The Living Principle of the plant—Protoplasm ; the Cell, and its principal modifications for special purposes ; evolution and distribution of the Tissues, considered especially from a biological standpoint.

The Leaf as a bio-anatomical study; epidermis, vascular bundles, ground-tissue, intercellular spaces.

The internal morphology of the Stem, in its chief modifications; the results of cambial activity; the secondary protective tissues, Cork and Bark. The Root.

The Bud; the principal characteristics of increase in length in shoot and root.

The phenomena of climbing, and illustrations of special powers of movement.

The elementary facts in the Nutrition of the plant, including the nature and sources of the raw materials of food, and the constitution of the soil; Absorption and the Transpiration current; the nature and functions of Chlorophyll; the broad principles of metabolism, and the distribution, storage, and utilisation of its products. Respiration.

Nutrition without chlorophyll, and special fermentative changes, illustrated by Yeast, Bacteria, Moulds, and *Pythium*. Degrees of Parasitism in Flowering Plants. Insectivorous Plants.

Reproduction. Asexual and Sexual, further illustrated by *Spirogyra*, *Vaucheria*, *Fucus* and *Agaricus*. The primary divisions of the Vegetable Kingdom, viz.:—Thallophyta; Bryophyta (illustrated by a moss-plant); Pteridophyta (a fern plant, *Selaginella*); and Phanerogamia (flowering plants).

The general character and structure of the reproductive organs in Phanerogamia; pollination, and its methods; fertilisation; the development of the seed and the fruit; seed protection and dispersal; the natural spread of plants, and its limitations.

The Flower, and its chief modifications in structural plan, as illustrated in the following Natural Orders of the British Flora, viz.:—Ranunculaceae, Cruciferae, Violaceae, Caryophyllaceae, Leguminosae, Rosaceae, Umbelliferae, Compositae, Scrophularineae, Labiate, Cupuliferae, Liliaceae, Gramineae; and the description of plant specimens in semi-technical language.

*Botanical Excursions.* A few will be arranged for alternate Saturday afternoons in the Summer Term, and will be concerned with the Local Flora in its environment relations; as, e.g., Moor, Marsh, and Bog; Meadow and Riverside; Woodland, Hedgerow, and Climbers; Roadside and cultivated ground.

*II.*

## (GENERAL COURSE.)

*Lecture Days.*—Mondays and Fridays at 9.30, Tuesdays and Thursdays at 11.30; or other, if more convenient, hours.

*Laboratory.*—Six hours weekly, with two extra hours in the Summer Term. More time should be given by students taking Botany as a principal or double subsidiary subject.

FEE : Lectures and Laboratory, £6 6s.

A. *Life History and Classification.*

The outlines of morphology, external and internal, embryology, and phylogenetic relationships of the chief groups of plants, and their most important sub-divisions, will be studied by the aid of the following selected examples, which, so far as possible, will be dealt with in Laboratory and the Field as well as Lecture Room.

## Thallophyta.

## PROTOHALLOPHYTA.

- i. Flagellata.
- ii. Myxomycetes.
- iii. Schizomycetes (Bacteria).
- iv. Cyanophyceae (Schizophyceae).

## ALGÆ.

i. Diatomeae		
ii. Peridineae		
iii. Conjugatae		Desmids, <i>Spirogyra</i> .
iv. Chlorophyceae (a) Protococcoideae		<i>Sphaerella</i> , <i>Volvox</i> : <i>Pleurococcus</i> , <i>Hydrodictyon</i> .
	(b) Confervoideae	<i>Ulothrix</i> , <i>Cladophora</i> , <i>Edogonium</i> , <i>Coleochaete</i> .
	(c) Siphoneae	<i>Vaucheria</i> .
v. Phaeophyceae (a) Phaeosporeac		<i>Laminaria</i> .
	(b) Fucaceae	<i>Fucus</i> .
	(c) Dictyotaceae	
vi. Rhodophyceae		<i>Batrachospermum</i> .
vii. Characeae		<i>Chara</i> , <i>Nitella</i> .

**HYPHOMYCETES (FUNGI).**

- i. Phycomycetes    (a) Oomycetes              *Pythium.*  
                                (b) Zygomycetes              *Mucor.*
- ii. Ascomycetes    (a) Perisporiaceae              *Eurotium.*  
                                (b) Discomyctes              *Peziza.*  
                                (c) Pyrenomycetes              *Nectria, Claviceps.*  
                                (d) Tuberaceae              *Tuber.*  
                                (e) Exoasci  
                                (f) Saccharomyces              *Yeast.*
- iii. Basidiomycetes (a) Ustilagineae  
                                (b) Uredineae              *Puccinia.*  
                                (c) Hymenomycetes *L. palliota (Agaricus).*  
                                (d) Gasteromycetes *L. cooperdon.*
- iv. Lichenes

**Bryophyta.**

- i. Hepaticae              (a) Ricciaceae  
                                (b) Marchantiaceae *Marchantia.*  
                                (c) Anthocerotaceae.  
                                (d) Jungermanniaceae.
- ii. Musci                   (a) Sphagnaceae              *Sphagnum.*  
                                (b) Andreæaceae.  
                                (c) Phascaceæ.  
                                (d) Bryineae              *Funaria, Polytrichum*

**Pteridophyta.**

- i. Filicinae              (a) Filices              *Botrychium, Pteris.*  
                                (b) Hydropterideae      *Pilularia.*
- ii. Equisetinae           (a) Lycopodiaceae      *Equisetum.*
- iii. Lycopodinae          (a) Lycopodiaceae      *Lycopodium.*  
                                (b) Selaginellaceae      *Selaginella.*  
                                (c) Isoetaceae

**Phanerogamia (Spermaphyta).**

- i. Gymnospermae    (a) Cycadales  
                                (b) Ginkgoales  
                                (c) Coniferales              *Pinus, Cupressus.*  
                                (d) Gnetales
- ii. Angiospermae  
                                Monocotyledones  
                                Dicotyledones.

*Palaeobotany.*—The elements of the distribution of the chief groups of plants in time.

*Field Botany.*—In addition to the general morphology, &c., of the Phanerogamia, the course will include the characters and relationships of the most important Natural Orders in the British Flora and their centres of extra-British distribution ; and the chief sub-orders of the following : Ranunculaceae, Rosaceae, Solanaceae, Cupuliferae, Coniferae ; the description of plants (not necessarily British) in technical language ; the origins of the British Flora.

### B. Physiology and Experimental Morphology.

The stability of the Plant Body.

Aeration.

Nutrition ; the processes of absorption of water and dissolved substances, and their distribution ; Root-pressure ; Transpiration.

The metabolic processes. Respiration.

The phenomena of growth and movement. Irritability ; the transmission of stimuli, and the mechanism of movement.

In the Laboratory the most important of the above phenomena will be experimentally studied, in the main qualitatively.

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## SPECIAL COURSES.

### II.A.

The following Special Courses of Lectures, open to students in their second or third years, will be delivered by Mr. WEST, in the Spring and Summer Terms respectively :—

#### A. The Fungus-Diseases of Plants.

To include Club-Root (Finger-and-Toe). Mildews ; Damping off of Seedlings ; Clover and Vine-Mildews. Leaf-Curl ; Bladder Plums ; Witches' Brooms. Larch Canker. Ergot. Leaf-Blotches. Rust and Smuts. Root Rot and Heart-wood Rot of Trees. Dry Rot of Timber.

*B. Plant Distribution upon a Physiological Basis (Oecology).*

The influence on vegetation of the various factors which affect plant life. Xerophytes, Hygrophytes, Holo-phytes, etc. Insular Floras.

Plant formations and plant guilds.

Vegetation of the temperate, tropical, and arctic zones.

The mountain regions of vegetation and the climatic factors which determine them. Alpine Floras.

*III.*

Short Terminal Courses, each of ten lectures, open to students who are taking Botany as a Principal, or Double Subsidiary Subject, and others by arrangement, will be delivered throughout the session as follows, on Tuesdays at 4.30.

*A. General Principles of Palaeobotany.*

*B. Evolution.*

*C. Recent Developments in Botanical Knowledge.*

*Third Year Laboratory.* Students who make Botany a Principal Subject will have taken the General Course in their second year, with extended laboratory practice ; and in their third year can give somewhat more special attention to one of the following divisions :—

- (a) General Morphology, Embryology, and Development, with Classification and Distribution in Time and Space.
- (b) Cytology, Physiology, and Experimental Morphology, and Plant Diseases.

Micro-chemistry, and the practice of modern histological methods, will be studied in either case.

FEE : Lectures and Laboratory, £8 8s.

For Vacation Reading, see p. 424.

*REQUIREMENTS FOR DEGREES.*

*Intermediate Examination in Science* :—Course I.

*B.Sc. Degree.* Botany as a Principal Subject :—  
Courses II. (with extended laboratory work),  
Course III. with special attention to one of the  
alternative divisions, together with the short  
Special Courses.

Botany as a Subsidiary Subject :—Course II., or,  
in certain cases, parts of one of alternative  
Courses III. and of II.; as a Double Subsidiary  
Subject, Course II., with extended laboratory  
practice, and parts of alternative Courses III.,  
together with certain of the short Special  
Courses.

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## BOTANICAL LABORATORY.

The Laboratory is open daily from 9.30 to 5, for the purpose of study or research. In connexion with it is a large *Experiment House* in the Botanical Gardens of the Birmingham Botanical and Horticultural Society, Edgbaston, which is especially adapted for work in Vegetable Physiology and Experimental Morphology.

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## BOTANICAL MUSEUM.

Amongst other collections, the Museum is rich in specimens illustrating the Fungus-Diseases of Plants, and the destruction of timber trees and of timber.

The Herbarium includes the following very valuable Special Collections :—

*The " Holmes " Collection of Algæ.*—About 13,000 specimens; made by E. M. Holmes, F.L.S.; purchased and presented (through W. H. Wilkinson, F.L.S.) by Wm. A. Cadbury.

*The " Plowright " Collection of Fungi.*—About 9,000 specimens; made by Chas. B. Plowright, M.D.; purchased and presented by a group of donors.

*The "Larbalestier" Collection of Lichens.*—About 7,000 specimens; made by Chas. du Bois Larbalestier, M.A., F.L.S.; purchased and presented by Wm. A. Cadbury.

*The "Horrell" Collection of Mosses.*—About 15,000 specimens; made by E. Chas. Horrell, F.L.S.; purchased and presented (through Thos. H. Russell, F.L.S.) by a group of donors.

*Botanical Gardens, Edgbaston.* Students attending any of the above classes can obtain from the Professor a card of admission to these Gardens.

#### TIME TABLE.

(LECTURES ONLY.)

BOTANY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I. ....	4.0	...	11.0*	...	4.0†
Course II. ....	9.30	11.30	...	11.30	9.30
,, (Special Courses)		<i>By arrangement.</i>			
Course III. (Special Courses) ....	...	...	4.30	...	...
Laboratory ....	...	Daily	9.30 to	5.0.	

\* As alternative hour to Monday at 4.0.

† Winter and Spring Terms only.

## GEOLOGY

(with PHYSIOGRAPHY and GEOGRAPHY).

*Professor* : CHARLES LAPWORTH, M.Sc. ; LL.D. (Aber.), F.R.S., F.G.S.

*Senior Lecturer on Geology and Geography* :

THEODORE GROOM, M.A. (Cantab.), D.Sc. (Lond.), F.G.S.

*Lecturer* : F. RAW, B.Sc. (Lond.), F.G.S.

*Special Lecturer in Petrology* : F. RAW, B.Sc.

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### UNIVERSITY COURSES.

#### I.

#### Junior Course.

*Lectures*.—Tuesdays, Thursdays, and Saturdays, at 9.30 throughout the Session.

*Laboratory*.—Tuesdays, Thursdays, and Saturdays, at 10.30.

FEE :—£5 5s.

#### *PHYSICAL GEOLOGY.*

GENERAL CHARACTERS of the simple rock types, clastic and crystalline.

ORIGIN OF THE SEDIMENTARY ROCKS.—Denudation by weather, rivers, glaciers, and the sea; deposition of sediments, and structures resulting from it; consolidation and cementation.

CLASSIFICATION OF SEDIMENTARY ROCKS and characters of the chief types; breccia, conglomerate, grit, sandstone, clay, shale, limestone, coal, salt, gypsum.

ORIGIN AND CLASSIFICATION OF THE IGNEOUS ROCKS.—Volcanoes; their action and the rocks produced by them. Minerals: quartz, felspars, mica, augite, hornblende, olivine, calcite, salt, kaolin, serpentine. Textures of the igneous rocks. Chief types of volcanic rocks; rhyolite, trachyte, obsidian, pitchstone, pumice, andesite, basalt and tachylite; clastic volcanic rocks. Chief types of plutonic rocks; granite, syenite, diorite, gabbro, dolerite.

**ROCK STRUCTURES.**—Folds, faults, cleavage, joints ; mineral veins.

**ARRANGEMENT OF ROCKS** in the earth's crust ; geological maps and sections.

**FOLIATED AND ALTERED ROCKS.**—Gneiss, granulite, schist, quartzite, porcellanite, marble ; minerals of metamorphism, chiastolite, mica, garnet ; contact and dynamic metamorphism.

#### *HISTORICAL GEOLOGY.*

**INTRODUCTORY.**—The laws and generalizations of *Stratigraphy* and *Palæontology* : *Fossils*, their mode of petrifaction, and uses in Geology : The order of superposition : The Geological Record.

**THE EOZOIC ERA.**—General physical characters and relationships of the *Pre-Cambrian* Rocks.

**THE PROTOZOIC ERA.**—General characters of the rocks and fossils of this era : Outlines of the classification of the formations and organic remains of the *Cambrian*, *Ordovician*, and *Silurian* Systems in Britain.

**THE DEUTOZOIC ERA.**—Chief characteristics of strata and organic remains of British rocks of this era : The *Devonian* and Old Red Sandstone Period : the *Carboniferous* System of Britain ; its main divisions and fossils ; chief British coalfields and their economic products : The *Permian* Rocks, and their peculiar phenomena.

**THE MESOZOIC ERA.**—Physical features of the *Triassic* Rocks of Britain and Germany : British salt producing districts ; The *Jurassic* Formations and their iron-stones, building stones, and most abundant fossils ; The *Cretaceous* Rocks, conditions of their deposition and life.

**THE CAINOZOIC ERA.**—Contrasts between Mesozoic and Cainozoic life : Chief divisions and zoological features of British *Tertiary* Rocks : Crust disturbances during *Tertiary* time.

**THE GLACIAL AND POST-GLACIAL EPOCHS.**

#### *LOCAL GEOLOGY.*

One Lecture weekly during the Summer Term, with the addition of Saturday Excursions.

Outlines of the geology and physiography of the Birmingham District. In addition to the lecture the students attend the series of *Excursions* on Saturday afternoons during the Summer Term.

*II.***Senior Course.**

*Lectures*.—Mondays, Wednesdays, and Fridays, at 11.30.

*Laboratory*.—Mondays and Wednesdays at 10.30, and Fridays at 9.30.

FEE : £4 4s.

(a) PETROLOGY.

The description and determination by physical and microscopical tests of the chief rock-forming minerals ; study and recognition in hand specimens, and microscope slides of the chief rock-types ; practical determination of rock-textures. Characteristics and distribution of the chief rock-types of the British Isles.

(b) STRATIGRAPHY.

The geological formation of Britain as shown in their typica, areas and elsewhere ; their lithology, sub-divisions, fossils, correlation and economics : geology and physiography of special areas occupied by them. The physical geography and vulcanicity of the different periods.

(c) PALÆONTOLOGY.

Fossils, their preservation, sequence and affinities ; structure, classification, and distribution of the most important fossil forms.

(d) TECTONIC GEOLOGY.

The study and interpretation of geological structure as shewn on maps and sections ; the relationships of structure to relief, drainage and economics ; the drawing of sections across maps, etc.

(e) FIELD GEOLOGY.

A detailed study of a definite area in the Midlands, considered as a type ; the development of its different rock-formations ; their relationships and economics. One day in each week in the summer term is devoted by the class to mapping the selected area in the field.

(Mining and Engineering students substitute III. A1, 2, and 5 for II. b, c, and d.)

## SPECIAL COURSES.

*IIIA.*

## Applied Geology.

*Lecture and Laboratory.*—Hours by arrangement.

Field Work on Fridays in the Summer Term.

FEE : £4 4s.

## ECONOMIC GEOLOGY.

1. WATER SUPPLY.—Overground supplies, drainage areas, reservoir sites; underground supplies, springs, wells, drainage areas; calculation of resources; effects of rock structure and surface configuration; contamination, etc.
2. BUILDING MATERIALS.—Stone, clays, slate, cement: distribution of building materials, ornamental stones, road metals.
3. FUELS.—The detailed geology of the carboniferous and associated formations; position and succession of the coal-bearing rocks; the coalfields, visible and hidden, their structure and correlation; petroleum and other fuels.
4. ORES.—The chief metalliferous minerals and their distribution and association; nature and structure of the chief kinds of ore deposits; the chief ore-bearing districts in Britain and elsewhere.

## GEOLOGICAL SURVEYING.

5. GRAPHICAL GEOLOGY.—The construction of geological maps and sections from given data; the determination of the position, extent and relations of coal seams and other strata of economic value; dislocations, veins, etc.; interpretation of maps.
6. INDIVIDUAL FIELD WORK.—The working out and description of geological structure by each student from his own observations in the field, and the construction of an original geological map of the area selected.

*III. B.**BIOLOGICAL GEOLOGY (PALÆONTOLOGY).*

Lecture and Laboratory hours by arrangement.

FEE: £4 4s.

## 1. GENERAL PALÆONTOLOGY.

The nature and preservation of fossils ; the general succession of life as revealed by the geological record ; the imperfection of the record ; a special study of the hard parts of each of the principal classes of the invertebrata and cryptogamia ; the structure, classification and range of the chief families and their most important genera ; a general knowledge of the fauna and flora of the geological systems.

## 2. DETAILED PALÆONTOLOGY.

*A detailed study of one of the fossil orders of the invertebrata or cryptogamia ; or of the fauna or flora of some one geological system and its divisions.*

*III. C.**PETROLOGICAL GEOLOGY (MINERALOGY AND PETROGRAPHY).*

*Lecture and Laboratory.*—Hours by arrangement.

FEE: £4 4s.

## 1. MINERALOGY.

Form and structure of minerals ; nature of crystalline form ; systems of crystalline form ; isomorphism ; pseudomorphism ; Chemical composition of minerals ; Classification of minerals ; Description and determination of minerals by microscopic, chemical, and physical tests ; the use of convergent and plane polarised light.

## 2. PETROGRAPHY.

Classification and determination of rocks by microscopical and physical means in hand specimens and rock-slides ; study of the occurrence and distribution of rocks in Britain and the principal and typical foreign localities ; principles underlying the genesis and classification of rocks ; dynamical and thermal metamorphism of rocks.

## GRADUATE COURSES.

## IV.

*HIGHER STRATIGRAPHY, PALÆONTOLOGY AND PETROLOGY.*

Lecture days and Laboratory hours by arrangement.

FEE for each term :—£2 2s.

This Course is projected for candidates for the degree of M.Sc., and for those who desire to study in detail the Petrological, Historical, and Biological aspects of Geology. The Course extends over one year, the student taking up the several sections of the subject in sequence, and accompanying each stage by a study of the books and publications in the University Library, and of the illustrative series of fossils and rocks in the University Museum. During the third Term the pupil prepares a Thesis upon some selected subject in Petrology, Geology, or Palæontology.

## V.

## Research Work

*IN GEOLOGY AND PALÆONTOLOGY.*

FEE for each Term : £2 2s.

Advanced students who have completed their systematic College Courses, those who have obtained the degree of M.Sc., and are preparing for the Doctorate, and occasional geological students, British or Foreign, studying some special branch of Geology or Palæontology, work in the Museum and Laboratory during term time, under the direction of the Professor and Lecturers, with use of the collections and microscopes.

The chief subjects at which such students may work include (1) Graptolites, Trilobites, Brachiopoda, &c., British and Foreign; (2) Geological Surveying; (3) Zonal Geology; and (4) Petrography.

The large collections of rocks and fossils in the Geological Museum from the older rocks, the range and variety of the geological formations in the Birmingham District, and the proximity and availability of the classical geological ground of the West of England, afford research students especial opportunities and facilities for the prosecution of original work.

#### VI.

#### Practical Work.

#### LABORATORY CLASSES.

In connexion with the foregoing Courses, Practical classes are held in the Geological Laboratory, upon such days and hours as are found most convenient to the students. The instruction given has reference to the actual study and examination of the minerals, rock-specimens and fossils noticed in the Lectures; the methods of mounting, and determining of fossils; the preparation of rock specimens for the microscope and cabinet; the drawing of figures, maps, sections, &c.

Persons not attending Lectures, but wishing to work in the Geological Laboratory and Museum, can do so at all times when open, on payment of a terminal fee of £2 2s., or for two hours weekly, 10s. 6d. each term. Such students will be encouraged and assisted in the prosecution of their private studies or original work.

For Vacation Reading, see p. 424.

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#### REQUIREMENTS FOR DEGREES.

*B.Sc. Degree.* I. Geology as the *principal* subject; Course I. in the first year; Course II. in the second year, together with part A, B, or C of Course III., instead of the corresponding Sections of Course II.

**2 Geology as a subsidiary subject :—**

- (a) One year, Course I.
- (b) Two years, Course I. and Course II.
- (c) *B.Sc. Degree in Mining.* Course I. in the first year, parts of Courses II. and III. A in the second year, and the remainder of Course III A in the third year. (See page 233.)
- (d) *B.Sc. Degree in Engineering.* Course I. in the second year; parts of Courses II. and III. A in the fourth year. (See page 233.)

**B.A. Degree. Geology as a subsidiary subject :—**

- (a) One year, Course I.
- (b) Two years, Course I. and Course II.

TIME TABLE.

GEOLOGY.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Course I. ...	...	...	9.30	...	9.30	...
Laboratory	...	...	10.30	...	10.30	...
Excursions (Sum.)	...	...	...	...	...	Aft.
Course II.	...	11.30	...	11.30	...	11.30
Laboratory	...	10.30	...	10.30	...	9.30
Field-work (Sum.)	...	...	...	...	10.30	...
Courses III,IV,V,VI	...	<i>By arrangement.</i>				...

### Elementary Economic Geology.

This Course is projected for those who are unable to attend a complete systematic Course in Geology, but who are desirous of knowing the principles and practice of the science in so far as they can be utilised in business, and in professional and everyday life.

This Course will commence with a section dealing with the fundamental facts and principles of Geology. This will be followed by sections dealing with Geology as applied to water-supply, sanitation, agriculture, &c., and a further group of sections dealing with the application of geology to architecture, mining, &c.

Section I must be taken by all ; Sections I. and II. by Brewing Students and Candidates for the Diploma in Public Health. The remaining sections are elective.

Each Section will include about ten lectures and ten demonstrations, two hours a week, during the Winter and Spring Terms.

FEE for each Section :—£1 1s.

*Winter Term.*—Mondays and Fridays at 12.30.

I. THE OUTLINES OF GEOLOGY.—The rocks and rock-formations ; geological maps and sections, their interpretation and uses.

II. GEOLOGY AND WATER SUPPLY.—

(a) Overground waters and their action and employment ; drainage, sanitation, water supply, reservoirs.

(b) Underground waters and water supply, water-bearing rocks and formations, springs, wells, hard and soft waters.

*Spring Term.*—Mondays and Fridays at 12.30, or by arrangement.

III. GEOLOGY AND ARCHITECTURE.—Chief British building stones, their characters and distribution ; fire-clays ; brick-clays ; cements ; building sites ; road metals.

IV. MINING GEOLOGY.—Fuels of Britain ; the coal-fields ; coal and coal-mining, &c. ; ores and ore-bearing formations ; chief ore-bearing districts of Britain and the Colonies.

**AFTERNOON CLASSES.****I. ELEMENTARY COURSE.**

A course of about thirty lectures (10 in each Term) is delivered on the

**Elements of Geology.**

These Lectures are of a popular and untechnical character, and present a summary of the chief principles, methods, and conclusions of the Science of Geology. They are illustrated by a series of diagrams, rock specimens, and fossils. This course is intended for beginners in geology, for amateurs, for those persons of leisure who desire a knowledge of the outlines of the science, and for those who intend to join the Summer Excursion Class.

Admission to the first lecture free.

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**WINTER TERM.****Physical Geology.**

*Lecture Hour.*—Thursdays, at 2.30 p.m.

FEE : 10s. 6d.

TEXT BOOKS RECOMMENDED.—WATTS : *Geology for Beginners* (Macmillan). LAPWORTH : *Intermediate Text Book of Geology* (Blackwood). JUDD : *The Student's Lyell* (Murray).

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**SPRING TERM.****Historical Geology.**

*Lecture Hour.*—Thursdays, at 2.30 p.m.

FEE : 10s. 6d.

ADDITIONAL TEXT BOOK RECOMMENDED.—JUKES-BROWNE : *The Building of the British Isles* (Bell).

## SUMMER TERM.

Local Geology and Excursion Class.

## GEOLOGY OF BIRMINGHAM AND DISTRICT.

The main object of this Section is to afford the student a practical knowledge of the geological structure of the neighbourhood of Birmingham and of the Midlands generally. The various geological formations found within thirty miles of Birmingham are described in a series of lectures, illustrated by typical rocks and fossils.

Upon every Saturday when practicable, Excursions are made by members of the class to the more important geological localities of the district, and the visible phenomena studied in the field.

*Lecture Hour.*—Thursdays, at 2.30 p.m.

FEES for the Term :—Excursions and Lectures, £1 1s. ; Lectures only, 10s. 6d.

TEXT BOOK RECOMMENDED.—LAPWORTH, WATTS, and HARRISON : *A Sketch of the Geology of the Birmingham District.*

## GEOLOGICAL EXCURSIONS.

As a general rule the Excursions take place on Saturday after 1 p.m. A few whole-day excursions are made by arrangement with the members of the class.

FEE for the Excursions :—£1 1s.

## II. ADVANCED COURSE.

## WINTER AND SPRING TERMS.

An Afternoon Class in

## Advanced Geology

for Senior students and others will also be formed during the Winter and Spring Terms.

*Lecture Hour.*—Tuesdays, at 2.30 p.m.

FEE : 10s. 6d. for each Term.

The lectures in Advanced Geology deal with some special aspect of the science (*a*) in which research is still in progress, (*b*) which is of interest from the theoretical point of view, or (*c*) which is related to the advancement of other sciences. Among the subjects lately treated of are :—Applied Geology; the Recent Advances in Fluviology and Glaciology; the Geology of France and the Baltic region.

The subjects proposed for the ensuing session include the Regional Geology of North America, Germany, and India.

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### III. POPULAR COURSE.

During the Winter and Spring Terms a course of twenty Afternoon Lectures (ten in each Term) will be delivered on

#### **The Ancient Life History of the Earth.**

This Course of lectures (which may be attended by beginners in Geology, as well as students in Elementary, Junior and Advanced Geology) will treat of the principal fossil groups of Animals and Plants, especially those which illustrate the course of Organic Evolution. The lectures will be of a non-technical character, and will aim at presenting the creatures described as nearly as may be in their actual forms and associations. The course will be fully illustrated by lantern slides and fossils.

Admission to the first lecture free.

*Lecture Hour.*—Thursdays, at 3.30 p.m.

FEE: 10/6 each term.

#### **Syllabus.**

The preservation of animals and plants as fossils, and the succession of past life in time.

THE LIFE OF THE PRIMARY ERA.—The trilobites, corals, and brachiopods, etc., of the primary seas.

The advent of fishes and their evolution through geological time.

The plants of the coal and their modern representatives.

The development of seed-bearing plants.

The first air-breathing vertebrates, and their relationships

THE LIFE OF THE SECONDARY ERA.—The land reptiles.

Swimming and flying reptiles and the early forms of birds.

THE LIFE OF THE TERTIARY ERA.—The early forms of mammals and their relationships.

Later mammals : the evolution of some modern forms.

Prehistoric man ; his early history and animal contemporaries.

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## PHYSIOGRAPHY.

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### Elementary Physiography.

See Physical Geography, page 243.

### Intermediate Physiography.

See Physical Geography, page 244.

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## GEOGRAPHY.

*Senior Lecturer* : THEODORE GROOM, M.A. (Cantab.),  
D.Sc. (Lond.), F.G.S.

*Lecturer* : F. RAW, B.Sc. (Lond.), F.G.S.

### A.

#### PRELIMINARY COURSE.

This Course includes about thirty Lectures on Elementary Physical Geography and thirty Lectures on Elementary Political Geography.

FEE for the Term: £3 3s.

*Lectures*.—Tuesdays and Thursdays, at 3.30, during the Session.

#### Physical Geography.

THE EARTH in its relation to the other bodies in the Solar System; the form and size of the globe; its movements and their effects in day and night, the seasons, eclipses

THE SURFACE OF THE EARTH.—General distribution of land and water; the contour, relief, and drainage of the continental land areas.

THE ATMOSPHERE.—Its composition and density; the determination, distribution, and representation of its temperature and pressure; the circulation of the air, permanent and periodic winds, storms; the moisture of the air, dew, hoar-frost, fog, mist, clouds, rain, snow and hail; general distribution of rainfall and its causes; climate.

THE SEA.—Composition and temperature of sea-water; depths of the ocean, form and deposits of its floor; chief movements of the ocean-waters, waves, and currents.

THE LAND.—The chief constituents of the earth-crust, stratified and unstratified rocks; the work of rain, frost, rivers, and ice; springs, glaciers, valleys, waterfalls, lakes, meadows, deltas; earth-movement and earthquakes; volcanoes, their phenomena and distribution.

LIFE.—The general geographical distribution of animals and plants; biological regions.

### Political Geography.

THE CONTINENTS, their natural features, climates, productions, peoples, countries, and chief centres of population.  
 THE BRITISH ISLES.—Relief, climate, products, industries, towns, trades, divisions, and government, and the *Outlines of the British Empire*.

### PRACTICAL GEOGRAPHY.

Practice in the drawing and interpretation of ordinary geographical maps and sections.

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#### I.

### INTERMEDIATE COURSE.

Tuesdays, Wednesdays, and Thursdays, at 12.30, or by arrangement.

#### Physical.

ATMOSPHERE.—Weather, its local and regional variation ; weather charts, storm warnings, and weather forecasts. Climates, their causes and present and past distribution. Electric and magnetic phenomena ; lightning, aurora, variation of the compass ; luminous phenomena ; refraction, absorption, &c.

HYDROSPHERE.—Form of the ocean floor, and its relation to that of the continents. Deep water temperatures and currents. Distribution of life in ocean waters. Abyssal and deep sea deposits. The tides.

LITHOSPHERE.—The composition and arrangement of the materials of the earth-crust. The rock formation. Crust movements, earthquakes and volcanoes, and their effects. General relief of the land, and its causes ; plateaux, mountains, plains, and valleys, and their origin.

LANDSCAPE.—Origin and development of landscape features. Form and development of rivers and river basins. Form and development of coast lines.

BIOLOGICAL GEOGRAPHY.—Distribution of terrestrial life. Characteristics and relations of the different biological regions.

### Political.

**MAN.**—The races of mankind, modes of existence, grades of civilisation, modes of government, industries and commerce.

**EUROPE.**—Inter-relations of relief contour and drainage; distribution of climates, flora, and fauna; natural and cultivated productions. Distribution of people as regards race, nationality, and language; chief countries and their centres of population and industry.

Outlines of the geography of France, Germany, Italy, Russia, together with one of the following :—

- (1) Asia: (a) Asia in general; (b) India; (c) China; (d) Japan.
- (2) Africa: (a) Africa in general; (b) Egypt; (c) British Africa.
- (3) America: (a) America in general; (b) British North America; (c) United States.
- (4) Australasia: (a) Australasia in general; (b) Australia; (c) New Zealand.

### PRACTICAL.

The reading and use of topographical maps on the 6in., 11in., and  $\frac{1}{4}$ in. scale; measurement of distances, directions, and areas; conversion of scales; representation of relief, drainage, and human works; tracing of water-sheds and drawing of sections to scale.

The reading of the thermometer, barometer, compass, etc.

Making of maps and plans, (a) by pacing and compass, and (b) by plane table.

Outdoor study of the topography of some special part of the Birmingham District and its causes.

Map projections, mode of construction, and special uses of each.

General application of maps and graphs to the study of the climate of Europe.



*II.*  
COMMERCIAL COURSE.

The Principles of Geography, with special reference to their application to Commerce.

*Lectures*.—Tuesdays at 3-30, and Thursdays at 12-30.  
FEE for the Course : £3 3s.

**General.**

MOVEMENTS OF THE EARTH and their effects in length of day, seasons, latitude and longitude, local time.

THE ATMOSPHERE ; temperature, winds, rain, climate.

THE LAND AND WATER ; distribution of land and water extent and character of coast lines.

(1) Water : currents and tides.

(2) Land : general relief of the continents, mountains, plateaux, valleys, plains, rivers, and lakes.

MINERAL PRODUCTS OF ECONOMIC VALUE.—Distribution of rock and soil, building and road-making materials, clays, fuels, ores, mineral manures.

ORGANIC PRODUCTS OF ECONOMIC VALUE.—Food materials and their distribution, textiles, skins, timber, etc.

The chief races of *Man*, their distribution, character, and languages. The changes effected by man. Mode of government as related to commerce, trade, and transport.

**Special.**

The Commercial Geography of areas specially selected to suit the requirements of the students.

**PRACTICAL WORK.**

Study of maps, recognition of the common inorganic commercial products.

TEXT BOOKS RECOMMENDED.—LYDE'S *Commercial Geography* ; HERBERTSON'S *Commercial Geography* ; CHISHOLM'S *Commercial Geography*.

## HUMAN ANATOMY AND ANTHROPOLOGY.

*Professor :* ARTHUR ROBINSON, M.D. ; M.D., C.M. (Edin.)

*Demonstrators* | T. YEATES, M.B., C.M., B.Hy.  
| P. P. COLE, F.R.C.S., L.D.S.  
| VIOLET A. P. COGHILL, M.B., Ch.B. (Edin.)

*Hon. Demonstrators :* W.E. BENNETT, M.B., Ch.B., F.R.C.S.

J. JAMESON EVANS, M.D. ; C.M. (Edin.), F.R.C.S.

The courses in Human Anatomy will be found fully described in the Medical section of the Calendar. The following information relates to candidates taking the above subject for the B.Sc. examination.

I.—In Human Anatomy the candidate must have pursued the entire medical course for two Winter and one Summer Sessions, as detailed in the regulations for medical degrees. He must also produce evidence that he has dissected the whole body at least once.

II.—In Anthropology the candidate must have attended the following courses of lectures :—

- (i.) The course on Embryology.
- (ii.) A course of lectures and practical instruction in Anthropology and Ethnology. This course will include a general review of the province of Anthropology. Zoological and Anthropological characters of Man. Physical measurements on the living subject. Cranial and other skeletal measurements.

FEES for these Courses :—

I.	For the two Winter and one Summer Sessions	...	...	...	...	£	26	5	0
	Incidental Fees	...	...	...	...		3	13	6
II.	For the Courses detailed under this section	...	...	...	...		4	4	0

## PHYSIOLOGY.

*Professor :* E. W. WACE CARLIER, M.Sc. ; M.D. (Edin.), F.R.S.E.

*Lecturer :* J. H. RHODES, M.B., Ch.B. (Edin.), M.R.C.S.

### UNIVERSITY COURSES.

#### *I.*

The courses prescribed in the Faculty of Medicine under II. and IV.

#### *II.*

The courses prescribed in the same Faculty under I. and V. The syllabus of V. is here appended :—

#### Advanced Practical Physiology.

Mondays and Fridays, from 2.30 to 4.30, during the whole Winter Session.

The Course will include the more advanced problems of experimental physiology, histology and physiological chemistry. The experimental part includes the physiology of muscle, nerve, heart, circulation, respiration, central nervous system, and organs of sense and voice. The chemical section includes the analysis of organic substances found in the body, the chemical and spectroscopic examination of the blood and its derivatives, the chemistry of the digestive products and the results of their activity. The histological part consists in the practice of the more advanced and complicated methods of histological research and of the results obtained by their use.

FEE for the Course: £6 6s., including an incidental fee of £1 1s.

Students desiring to prosecute research or other independent work in the laboratory will be allowed to do so *at the discretion of the Professor* on the payment of a fee of 2 guineas, including an incidental fee of £1 1s., for each period of three months.

*REQUIREMENTS FOR DEGREES.*

*B.Sc. Degree :—*

- (1) Physiology as a Principal Subject : Students must take Course I. as above in their first year, and Course II. in their second year.
- (2) Physiology as a Subsidiary Subject : Courses I. and IV. of the Medical Syllabus.

## ENGINEERING.

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### GENERAL INTRODUCTION.

The full courses extend over four years, and lead to the degree of Bachelor of Science in Engineering. Candidates for the degree must be matriculated before entering the courses.

Candidates for the degree, who, before entrance to the University, have passed the first Engineering Examination (or an Examination recognised by the University as equivalent) under the conditions specified on p. 29, will be allowed to enter the second year, and will be eligible for the degree in three years, instead of four.

Students who are unable to take a full course, or who have not been matriculated, will be admitted to the classes as far as room permits, and on leaving the University will receive a certificate stating the courses they have taken and their position in the examinations; *but before entering, such students are required to pass an entrance examination in Mathematics, and in either Experimental Mechanics or Chemistry up to the matriculation standard.*

Students, without taking a systematic course, may be admitted to any special course, provided that they can satisfy the Professor concerned that their previous knowledge is such as to enable them to follow with advantage the instruction given.

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### REQUIREMENTS FOR DEGREES.

The courses for the first year are the same for all branches of Engineering, but after the first year students must take up definitely one of the branches, Mechanical, Civil, or Electrical Engineering. The time-tables for the classes in all subjects taken by Engineering students are appended. Full details of the various Engineering courses will be found in the syllabuses of Mechanical, Civil, and Electrical Engineering, and of the Science courses in the syllabuses of the respective subjects.

**First Year.****FOR ALL STUDENTS OF ENGINEERING.**

- (a) Engineering—Lectures, Course I.  
Drawing.  
Workshop.
  - (b) Mathematics—Course I. (Pure) ;  
or, for more advanced students—  
Course II. (Pure), and  
Course I. (Applied).
  - (c) Physics—Lectures, Course I. and Laboratory.
  - (d) Chemistry—Lectures, Course I. (A) and Laboratory
- 

**MECHANICAL AND ELECTRICAL  
ENGINEERING.****Second Year.**

- (a) Engineering—Lectures, Course II.  
Exercises.  
Drawing.  
Workshop.  
Vacation Workshop.
  - (b) Mathematics—Course II. (Pure), and  
Course I. (Applied) ;  
or, for more advanced students—  
Course III. (Pure), and  
Course II. (Applied).
  - (c) Physics—Lectures, Course II.
  - (d) Metallurgy—Lectures, Course II. and Laboratory
- 

**Third Year.**

- (a) Engineering—Lectures :  
Machine Design Course III.  
Heat Engines, Course IV.  
Mechanical Engineering, Course V.  
Civil Engineering, Course IX.  
Electrical Engineering, Course XIII.

- Laboratory (Heat).  
 ,,, (Strength of Materials)  
 ,,, (Electrical).  
 Drawing (Mechanical).  
 ,,, (Electrical).  
 Workshop.  
 Vacation Workshop.

(b) Mathematics—Special Course.

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#### Fourth Year.

- Engineering—Lectures, Course VI. (Mechanical).  
 .. Course XIV. (Electrical).  
 Laboratory (Heat).  
 ,,, (Strength of Materials).  
 ,,, (Electrical).  
 Designing (Mechanical).  
 ,,, (Electrical).  
 Workshop.

Accounting.

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#### CIVIL ENGINEERING.

##### Second Year.

- (a) Engineering—Lectures : Course II. (Mechanical).  
 ,,, Course VII. (Civil).  
 Exercises.  
 Drawing.  
 Workshop.  
 Surveying.
- (b) Mathematics—Course II. (Pure), and  
 Course I. (Applied).  
 or, for more advanced students—  
 Course III. (Pure), and  
 Course II. (Applied).
- (c) Physics—Lectures : Course II.
- (d) Geology—Lectures : Course I.  
 Laboratory.
- (e) Surveying (Vacation)

**Third Year.**

- (a) Engineering—Lectures : Course VIII. (Civil).  
                  „         Course IX. (Civil).  
                  „         Course III. (Mechanical).  
                  „         Course IV. (Mechanical).  
                  „         Course XIII. (Electrical).  
Exercises : Course III. (Mechanical).  
Drawing and Surveying.  
Laboratory (Heat, Strength of  
Materials, and Electrical).  
(b) Mathematics—Special Course.  
(c) Surveying (Vacation).
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**Fourth Year.**

- (a) Civil Engineering—Lectures : Course X.  
                  „         Course XI.  
                  „         Course XII.  
Designing, Course XB.  
Laboratory (Strength of  
Materials, Hydraulic).  
(b) Geology—Lectures and Laboratory.  
Field Work.  
(c) Accounting.
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FIRST YEAR MECHANICAL, CIVIL, AND ELECTRICAL ENGINEERING TIME TABLE.

SUBJECTS.	CLASS HOURS.						Sat.
	Mon.	Tues.	Wed.	Thurs.	Fri.		
<b>ENGINEERING—</b>							
Lectures, Course I.	... ... ... ...	... ... ... ...	4—5 ... 2—5 2—4	... 2—5 ...	4—5 ... 2—4	... ... ...	...
Drawing	...	...					...
Workshop	...	...					11—1
<b>MATHEMATICS—</b>							
Course I. (Pure); or for more advanced students	12.30 ...	11.30 ...	...	11.30 ...	12.30 ...	...	...
Course II. (Pure) and Course I. (Applied)	10.30 ...	10.30 ...	10.30 ...	10.30 ...	10.30 ...	10.30 ...	...
<b>PHYSICS—</b>							
Lectures, Course I.	...	...	11.30 3—5	...	11.30 ...	...	11.30 ...
Laboratory	...	...					...
<b>CHEMISTRY—</b>							
Lectures, Course I. (A) Win. and Spr.	9.30 ...	9.30 ...	9.30 ...	9.30 ...	9.30 ...	...	...
Laboratory	...	...					...
*Course I. (Metals, &c.)	...	...					...
*Tutorial	...	...	2.0	...	...	...	...

COMPOSITION FEE:—£34.

\* Winter and Spring Terms.

SECOND YEAR MECHANICAL AND ELECTRICAL ENGINEERING TIME TABLE.

SUBJECTS.	CLASS HOURS.					Sat.
	Mon.	Tues.	Wed.	Thurs.	Fri.	
<b>ENGINEERING—</b>						
Lectures, Course II.	...	...	...	...	12.0	10.0
Exercises ,	...	...	...	...	...	...
Drawing ...	...	...	...	...	...	...
Workshop ...	...	...	...	...	2—5	11—1
Do. (Vacation) ...	...	...	...	...	2—5	...
<b>MATHEMATICS—</b>						
Course II. (Pure) and Course I. (Applied); or for more advanced Students	10.30 9.30	...	10.30 9.30	...	10.30 9.30	10.30 9.30
Course III. (Pure) and Course II. (Applied)	9.30 10.30	...	9.30 10.30	...	9.30 10.30	10.30 ...
Physics, Lectures, Course II.	...	11.30	...	11.30	...	11.30
METALLURGY, Lectures, Course II. Laboratory (including Steel Melting)	...	...	11.0 ...	...	11.0 ...	...

COMPOSITION FEE:—£50.

## SECOND YEAR CIVIL ENGINEERING TIME TABLE.

SUBJECTS.	CLASS HOURS.					Sat.
	Mon.	Tues.	Wed.	Thurs.	Fri.	
<b>ENGINEERING—</b>						
Lectures—Mechanical, Course II.	... ... ... ...	12.0 2—5 ...	...	12.0 ...	...	10.0 ...
Exercises " "	... ... ...	2—5 ...	...	...	2—5	...
Machine Drawing ...	...	...	...	...	...	11.1 ...
Surveying and Drawing, Civil, Course VII.	...	...	2—5	...	2—5	...
Workshop ... ... ...	2—5 ...	...	...	...	...	...
<b>MATHEMATICS—</b>						
Course II. (Pure) and ...	10.30 9.30 9.30 10.30	...	10.30 9.30 9.30 10.30	...	10.30 9.30 9.30 10.30	...
Course I. (Applied); or ...	...	...	...	...	...	...
Course III. (Pure), and ...	...	...	...	...	...	...
Course II. (Applied) ...	...	...	...	...	...	...
<b>PHYSICS—</b>						
Lectures—Course II. ... ...	11.30 ...	...	11.30	...	11.30	...
<b>GEOLOGY—</b>						
Lectures—Course I. and Laboratory ...	...	9.30—11.30	...	9.30—11.30	...	...
<b>VACATION COURSE—</b>						
Surveying, Civil, Course IX. (d)...	...	...	...	...	...	(Summer Vacation).

THIRD YEAR MECHANICAL ENGINEERING: TIME TABLE

SUBJECTS.	TERMS,	CLASS HOURS.						
		Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	
MATHEMATICS—	... ... ...	Session	9.30	9.30	...	9.30	9.30	...
<b>ENGINEERING—</b>								
Lectures—Mechanical, Course III.	...	Session	...	...	12.0	...	...	
Course IV.	...	Summer	...	11.0	...	12.0	...	
" " Course V.	...	Session	11.0	...	...	11.0	...	
" Civil, Course VIII.	...	Session	...	11.0	...	11.0	...	
" Electrical, Course XIII.	...	Session	...	12.0	...	12.0	10.0	
Laboratory—Heat	"	Summer	...	2—3	...	...	...	
" Strength or Materials	...	Winter	...	2—3	...	...	...	
Electrical ...	...	Session	...	...	...	2—3	...	
Drawing—Mechanical	...	Session	...	...	...	2—5	...	
" Mechanical	...	Winter	2—5	...	...	...	...	
" Electrical	...	Spr. & Sun	2—5	...	...	...	...	
Workshop	...	Session	...	...	2—5	...	...	
Do. (Vacation)	...	...	...	...	...	...	...	

COMPOSITION FEE:—£50.

THIRD YEAR CIVIL ENGINEERING TIME TABLE.

SUBJECTS.	TERMS.	CLASS HOURS.					Sat.
		Mon.	Tues.	Wed.	Thurs.	Fri.	
MATHEMATICS	Session	9.30	9.30	...	9.30	9.30	...
ENGINEERING—							
Lectures—Mechanical, Course III.	Session	...	...	...	12.0	...	...
Exercises—"	Course III.	...	...	...	2—5	...	...
Lectures—"	Course IV.	...	...	...	11.0	...	...
" Civil, Course VIII.	Session	...	11.0	...	11.0	...	...
" Course IX. (a, b)	Session	11.0	...	10.0	...	2—5	...
Exercises—" Course IX. (c)	...	2—5	...	...	...	...	...
Lectures—Electrical, Course XIII.	Session	...	12.0	...	12.0	...	10.0
Laboratory—Strength of Materials	Winter	...	2—5	...	...	...	...
" Heat	Summer	...	2—5	...	...	...	...
" Electrical	Session	...	...	...	2—5	...	...
Surveying—Civil Course IX. (d)	...	...	...	...	Summer Vacation	...	...

THIRD YEAR ELECTRICAL ENGINEERING TIME TABLE.

SUBJECTS.	TERMS.	CLASS HOURS.					
		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
MATHEMATICS	... ... ...	10.30	9.30	...	9.30	9.30	...
<b>ENGINEERING—</b>							
Lectures—Mechanical, Course III.	... Session	...	...	12.0	...	...	...
Course IV.	... Summer	...	...	11.0	...	12.0	...
" " Course V.	... Session	11.0	...	...	...	11.0	...
Civil, Course VIII.	... Session	...	11.0	...	11.0	...	...
Electrical, Course XIII.	... Session	...	12.0	...	12.0	...	10.0
Laboratory—Heat	... Summer	2—5	...	...	...	...	...
Strength of Materials	... Winter	2—5	...	...	...	...	...
Electrical ..	... Session	...	...	...	2—5	2—5	...
*Drawing—Mechanical	... Winter	2—5	...	...	...	...	...
Electrical ..	... Spr.& Sum.	2—5	...	...	...	...	...
Workshop	... Session	...	...	2—5	...	...	...
Do. (Vacation) ..	... ...	...	...	...	...	...	...

\* Students are expected to utilise any spare time, between Lectures, in the Drawing Office.

COMPOSITION FEE :—£50.

## FOURTH YEAR MECHANICAL ENGINEERING TIME TABLE.

SUBJECTS.	TERM.	CLASS HOURS.					Sat.
		Mon.	Tues.	Wed.	Thurs.	Fri.	
<b>ENGINEERING—</b>							
Lectures—Mechanical, Course VI.	Session	...	12.0	12.0	12.0	...	...
" Electrical, Course XIV.	Session	...	10.0	10.0	10.0	...	...
Laboratory—Heat	Session	...	...	...	...	11—5	...
" Strength of Materials (a)	Win. & Spr	2—5	...	...	...	...	...
" Electrical	Win. & Spr	...	...	2—5	...	...	...
Designing—Mechanical	Win & Spr	...	...	...	2—5	...	10—1
" Electrical	Summer	...	2—5	...	2—5	...	10—1
	Win & Spr	...	2—5	...	...	...	...
 ACCOUNTING							
	Session	...	...	...	...	9.30	...

COMPOSITION FEE:—£50.

## FOURTH YEAR CIVIL ENGINEERING TIME TABLE

SUBJECTS.	TERMS.	CLASS HOURS.				
		Mon.	Tues.	Wed.	Thurs.	Fri.
<b>ENGINEERING—</b>						
Lectures—Civil Course X. (a)	Session	...	12.0	...	12.0	...
" " Course XI. (a)	Session	...	11.0	10—1	11.0	...
" " Course XI. (b)	Winter	...	10.0	...	...	10.0
Exercises—	Session	...	...	...	...	10—1
Designing—	Course XII. (a)	...	...	...	...	...
" " Course X. (b) ...	Session	...	2—5	—5	2—5	...
Laboratory—Strength of Materials (b, c)	Win. & Spr.	2—5	...	...	...	2—5
" Hydraulic ...	Sum. ver	2—5	...	...	...	...
<b>GEOLOGY—</b>						
Lectures and Laboratory, Course II.	Session {	10.30— 12.30	...	{ 10.30— 12.30 }	...	...
Field Work	Summer	...	...	...	...	All day
<b>ACCOUNTING</b>						
	Session	...	...	...	...	9.30

COMPOSITION FEE :— £50.

## FOURTH YEAR ELECTRICAL ENGINEERING TIME TABLE.

SUBJECTS.	TERMS.	CLASS HOURS.				
		Mon.	Tues.	Wed.	Thurs.	Fri.
<b>ENGINEERING—</b>						
Lectures—Mechanical, Course VI. Electrical, Course XIV.	Session ... Session ...	12.0 10.0 10.0	12.0 10.0 10.0	12.0 10.0 10.0	12.0 10.0 10.0	12.0 10.0 10.0
Laboratory—Heat Strength of Materials (c). Electrical ...	Session ... Win. & Spr. Session 10—5 ... Session ...	... ... ... ... ... ...	... ... ... ... ... ...	... 2—5 ... ... ... ...	... ... ... ... ... ...	11—5 ... ... ... ... ...
Designing*—Mechanical Electrical "	Session ... Win. & Spr. Summer ...	... ... ... ...	... 2—5 2—5 ...	... ... ... ...	... ... ... ...	... ... ... 10—1
ACCOUNTING	... ... ...	... ... ...	Session ...	...	...	9.30 ...

\* Students are expected to utilise any spare time between Lectures in the Drawing Office.

COMPOSITION FEE :—£55.

## MECHANICAL ENGINEERING.

THE UNIVERSITY, EDGBASTON.

*Professor* : F. W. BURSTALL, M.Sc.; M.A. (Cantab.),  
M.I.C.E., M.I.M.E.

*Demonstrator* :—(*Vacant*).

*Lecturer* : R. C. PORTER, M.Sc., A.M.I.C.E.

*Head Draughtsman* : J. H. SINCLAIR, M.Sc., B.Eng.

*Second Draughtsman* :—(*Vacant*).

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The training throughout the course is largely practical and experimental in its character; the University workshops, consisting of forge, foundry, machine shop and pattern-making shop, are very extensive, and equipped with the most modern tools.

In the later part of the course attention is directed to experimental work in the Engineering Laboratories, which are fitted with modern appliances for demonstration of the principles underlying engineering practice.

The University Power Station constitutes the heat engineering laboratory, in which the experimental work on steam and gas engines is carried out. The boiler room contains two water tube boilers of different patterns, two marine boilers, a locomotive boiler, a gas fired super-heater, four feed pumps of various designs, a feed heater, etc. One of the boilers is fitted with a mechanical stoker for the purpose of comparison with ordinary hand-fired furnaces. The engine-room contains two high-speed steam engines of different designs, a triple-expansion marine engine, a steam turbine, four different types of condensers, a two-stage air compressor, two gas engines of different types, and an oil engine, which latter drives an ammonia refrigerating plant.

The size of the plant is sufficient for obtaining satisfactory results, the steam engines having a total output of 400 h.p., and the gas engines of 160 h.p., while the boilers can evaporate 25,000 lbs. of water per hour. Every

engine has its own electric generator, and artificial loads are provided for absorbing the current when it is not required for lighting purposes. Attached to the Power Station is a Mond gas generating plant, large enough to gasify five tons of coal per day, and produce 30,000 c. ft. of gas per hour.

The whole University being dependent on this Power Station for lighting, heat, and power, students can learn by actual experience the work involved in running such a station.

On account of the importance and responsibility of working in this laboratory, no student who is not an undergraduate will be allowed to take a course there unless he previously passes a special examination to show that his general engineering knowledge is sufficient to ensure that he can do so with profit.

The Foundry is 50 feet long and 25 feet wide, and is equipped with an ample supply of boxes, tools, etc., besides an over-head travelling crane for handling heavy moulds, and a mortar mill for preparing the sand. A drop-bottom cupola provided with an electric blower is placed just outside the Foundry for melting the iron, while brass is melted in a gas-fired furnace ; gas is also used for the core-drying stove.

The Drawing Office is capable of accommodating 120 students. It is 50 feet wide and 100 feet long, and furnished with suitable tables, each fitted with an independent electric light, drawers and lockers for storing students' drawings and instruments, and modern vertical drawing tables for the use of senior students. It is also equipped with a set of sectional models of machine parts. Drawing boards of suitable dimensions are supplied for students, but the student must provide for himself a set of standard instruments and materials, particulars of which will be given by the Lecturer.

Adjoining the Drawing Office is the Blue Print Room, where students receive instruction in blue printing, and other methods of the rapid reproduction of drawings.

It is fitted with a modern electric blue printing machine, developing baths, and drying arrangements.

The Machine and Fitting Shop together have a floor space of 7,500 square feet, and are equipped with modern plant, including standard lathes, grinding machines, horizontal and vertical milling machines, planing and shaping machines, and boring machines ; and a large assortment of small tools, micrometers, limit gauges, etc. There are also in this department specially constructed tools for the demonstration of the use of high speed steels. Students must provide certain standard small tools, particulars of which will be given by the Instructors.

The Pattern Shop has a floor space of 2,500 square feet, and is equipped with standard hand and power wood working tools, including power, planing, and thicknessing machines, band, circular, and dimension saws, lathes, hand trimmers, and a large assortment of general hand wood-tools. Students must provide certain standard small tools, particulars of which will be given by the Instructor.

The Smithy is the same size as the Foundry, and contains twelve hearths supplied with air blast by an electric blower, and a three-hundredweight power hammer. Oil tanks, air blast, etc., are also provided for hardening and tempering tool steel.

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## LECTURE COURSES.

### First Year.

#### *COURSE I.*

##### DESCRIPTIVE COURSE.

Tuesdays and Thursdays, 4 to 5, throughout the Session.

FEE : £4 4s. od.

During the first term the Lectures will include the description of tools used in Engineering, and will be illustrated by a large collection of lantern slides.

For the second term the lectures will deal with steam boilers, steam engines, and gas and oil engines.

*Hand Tools for Wood and Iron.*—The plain lathe, engine lathe, slide rest, screw cutting, self-act and cross traverse, large lathes, special lathes (such as the capstan lathe), milling machine, planing machines, shaping machines, slotting machines, drilling machine, sensitive and multiple drills, grinding machines, boring machines.

*Types of Boilers and Boiler Fittings.*—Cornish, Lancashire, vertical, locomotive, marine, water tube, feed heaters, economizers, super heaters.

*Steam Engine parts.*—The cylinder, slide valve, piston, stuffing box, kinds of packing, crosshead, guides, connecting rod, crank shaft, eccentric, bearings, lubrication, flywheels, cocks and valves.

*Types of Steam Engines.*—Mill engine, locomotive, marine, high speed, pumps and pumping engines, duplex pumps, feed pumps, centrifugal pumps.

*Gas and Oil Engines.*—Otto cycle, valves, governors, ignitors, Priestman oil engines, Hornsby oil engine, Diesel motor.

The third term will be devoted to an introduction into Electrical Engineering, consisting mainly of a descriptive and demonstrative course in which the students will be made acquainted with the general types of electrical machinery and apparatus. The lectures will include an exposition of construction and principle of action of the following : Dynamo Machines for continuous and alternating current ; Transformers ; Measuring Instruments, such as Ampere Meters, Volt Meters, Galvanometers, Wheatstone's Bridge, Electricity Meters ; Types of Cables : Secondary, Batteries, Switches, and Switchboards, Fuses, various types of Electric Lamps.

The lectures will be combined with demonstrations in the Laboratory where students will be shown the various machines and appliances described in the lectures.

## Second Year.

## COURSE II.

## APPLIED MECHANICS.

Tuesdays and Thursdays at 12, Saturdays at 10,  
throughout the Session.

FEE: £6 6s.

The lectures on Tuesdays and Thursdays will be on Graphics, according to the following syllabus :—

(a) GRAPHICAL MENSURATION.—Areas of polygons, closed curves, and surfaces. Volumes.

*Vectors*.—General properties, rules for addition and subtraction, position vectors.

*Mass Centres*, by vectors and other constructions. Points, lines, surfaces, and solids. Moment of Inertia.

(b) GRAPHICAL STATICS.—Derivation of vector and link polygons, and conditions of equilibrium using these. Supporting forces. Force diagrams for roofs and girders. Diagrams of bending moment and shearing force. Maximum bending moments and shearing forces for rolling loads. Arches and chains in equilibrium. Problems in hydrostatics.

Exercises, Tuesdays, 2 to 5.

FEE: £3 3s.

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## Third Year.

## COURSE III.

## MACHINE DESIGN.

Wednesdays at 12.

FEE: £2 2s.

*General Principles*.—Properties of materials. Straining actions. Stress, physical constants for ordinary materials, factors of safety, working stress for dead and live loads.

*Fastenings, Screws.*—Standard forms and dimensions of threads, multiple threaded screws. Screw bolts, studs, set screws.

*Keys and Cotters.*—Forms of keys. Taper and dimensions. Gib and cotter joint. Special precautions to be taken with alternating stresses, methods of adjustment and fastening.

*Riveted Joints.*—Proportions of rivets, riveting, punching, drilling, caulking. Forms and proportions of joints. Shearing resistance of rivets and tenacity of plates before and after riveting, calculation of pitch. Arrangements of groups of rivets in ties, etc. Graphic method of designing joints. Efficiency of joints.

*Boilers.*—Thickness of shell, junction of plates, stays, angles.

*Shafting and Couplings.*—Strength of shafts, twisting moment, and transverse loads, variation in twisting moment

Calculations for shafts to resist twisting and combined bending and twisting. Mean and maximum twisting moments.

#### COURSE IV.

#### HEAT ENGINES.

Wednesdays at 11, Fridays at 12, Summer term.

FEE : £2 2s.

The laws of heat, properties of air, specific heat, properties of steam, latent heat. The Carnot cycle for air and steam; Rankine cycle for saturated and superheated steam; comparison of actual and perfect engines. Reversed heat engines on air, ammonia, and carbon dioxide.

Elementary theory of the internal combustion engines; calculation of temperature.

Testing of steam and gas engines, indicators, brakes; working out of engine tests and analysis of results.

*COURSE V.*

## MECHANICAL ENGINEERING.

Mondays and Fridays, 11 to 12, throughout the Session.

FEE : £4 4s.

General theory of friction, static and kinetic ; applications to brakes, earthwork, bearings, pivots, transmission of power by belts, ropes and friction couplings. Fluid friction ; applications to skin resistance of ships and bearings. Lubrication.

Teeth of wheels, cycloidal and involute. Helical teeth, bevel wheels, screw and worm wheels, skew bevel wheels : epicyclic and variable gears.

Valve gears, Zeuner diagrams, cut-off valves, link gears, radial gears, trip gears.

Governors : isochronism, stability, and inertia. Watt governors, loaded governors, spring loaded governors, wheel governors.

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## Fourth Year.

*COURSE VI.*

## MECHANICAL ENGINEERING.

Tuesdays, Wednesdays and Thursdays at 12.

FEE : £6 6s.

Advanced theory of the heat engine, entropy diagrams for saturated and superheated steam, behaviour of steam in the cylinder, clearance wire drawing, plotting of engine tests on the entropy diagram ; discharge of steam through nozzles, turbines. Theory of the gas and oil engine, properties of producer gases ; working out of gas engine tests.

Theory of the air compressor, different forms of compression, types of air motors, theory of reheating.

General principles of refrigerating machinery.

Transmission of power by air, water, gas. Cost of power. Effect of load factor.

Advanced machine design. Properties of stress and strain, composition of stresses, ellipse of stress, deflection and shear of beams, strength of cylinders, stability of chimneys, strength of crank shafts, connecting rods, effect of repeated loads, working loads.

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### LABORATORY COURSES.

#### Third Year.

##### HEAT LABORATORY.

##### SUMMER TERM.

Tuesdays, 2 to 5.

FEE : £4 4s.

The first two meetings will be devoted to lectures on Engine and Boiler Testing and the methods of deducing the results, casting up the heat balance, etc.

Tests will then be made on the Babcock, Niclausse, and locomotive boilers, and on the Willans, Belliss, and McLaren engines.

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#### Fourth Year.

##### HEAT LABORATORY.

*Mechanical and Electrical Engineers.*—Fridays, 11 to 5.

FEE : £12 12s.

The course will include the experimental study of all the forms of heat engines.

Attention will be directed to the steam consumption of the slow speed engines, the quick revolution engines, steam turbine, the economy of using superheated steam, the use of variable expansion and feed heating. Boiler trials will be made on the water tube and locomotive boilers with different kinds of coal.

Experiments on the efficiency of producers at different rates of working, and the influence of the regeneration will be made.

Comparison of slow speed and quick revolution gas engines, efficiency trials at various loads, influence of water cooling on barrel, cover, piston, exhaust valve, influence of scavenging.

Experiments can also be made on the Diesel oil engine and the refrigerating plant.

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## MACHINE DRAWING COURSES.

### First Year.

#### *COURSE I.*

Wednesdays, 2 to 5.

FEE : £3 3s.

After a few exercises to familiarise the student with the use of scales and drawing instruments, he proceeds to make drawings of simple joints and machine parts. These drawings which are at first left in pencil are in every case made from dimensioned freehand sketches, which the student himself makes from a model.

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### Second Year.

#### *COURSE II.*

Thursdays, 2 to 5, and Saturdays, 11 to 1.

FEE : £5 5s.

The second year course is a direct continuation of that of the first year. The same methods are employed, but the models from which the drawings are made are more complex, and the student will eventually proceed to make drawings of complete machines, and also of parts of structures such as complex joints in girder or roof work, supports, foundations, etc.

## Third Year.

## COURSE III.

## MACHINE DESIGN.

*Electrical Engineers*, Mondays, 2 to 5. Winter Term.

*Mechanical Engineers*, Mondays and Fridays, 2 to 5.

FEE : £6 6s.

During the first and second years the student has only made drawings from existing machines, but in the third year his drawings are the results of calculations, wherever possible, deduced from strength considerations, and in other cases from empirical formulæ based upon approved practice. It is a course in practical design.

The course in general engineering will include lectures on machine design, and the drawings made will be based upon the substance of these lectures.

The course will include :—

*Fastenings*.—Bolts, nuts, keys, cotters, pipes and pipe joints, riveted joints, the civil engineering students giving more attention to the joints that occur in constructional work, and the others to joints in boiler and similar work.

*Machinery of Transmission*.—Shafts, couplings, pulleys, bearings, belts, ropes, chains. Friction gearing spur and bevel wheels, helical and screw gearing.

After this may follow problems in which the strength considerations are more complicated, as in axles, journals, crank shafts, where bending and twisting moment diagrams are necessary.

In addition to the above, the civil engineering students will take some simple designs bearing upon their special work, such as joists, trussed beams, bridge floors, culverts, and sewer sections.

Electrical engineering students will be required to make from patterns exact working drawings of details, and later on calculations and working drawings of complete electrical apparatus and machinery.

**Fourth Year.***COURSE IV.***MACHINE DESIGN.**

*Mechanical and Electrical Engineers.*—Tuesdays and Thursdays, 2 to 5. Saturdays, 10 to 1.

FEE: £10 10s.

In the fourth year students largely specialise in their design work, the designs being based upon the special lecture courses.

The designs will be of a more complex character, and in all cases at least one complete design from specification and plans will be required.

The mechanical and electrical engineering students will deal with the following :—

Cylinders for steam and gas engines. Valves and valve gears of various types. Governors, fly-wheels, etc. Complete engines and boilers. Factory arrangements. Machine tools.

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**WORKSHOP COURSES.**

The Workshops are open from 10 to 5, Saturdays 10 to 1, to those who wish to take up Special Courses, at a fee of £8 8s. od. per term, or £22 1s. od. per session, for full time, or £5 5s. od. per term, or £12 12s. od. per session, for half time in any Workshop.

The fee for any portion of one term is at the rate of £1 11s. 6d. per hour per week per session.

## MACHINE AND FITTING SHOP.

*Instructors :* W. R. CHURCHWARD and F. H. A. HALL.

In this department the course of instruction consists of a series of graduated exercises, both on machines and vice, arranged to familiarise the student with all cutting and fitting operations, and general methods of construction.

*Exercises.*—Vice work. Exercises in chipping and filing plane and curved surfaces, and finishing to gauge and surface plate.

*Machine Work.*—Plain turning in cast iron, wrought iron, steel, brass, screw-cutting, and chuck work, Milling, Planing, Shaping, and Drilling exercises. Finishing to Micrometer and limit gauge. General engineering practice.

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## PATTERN SHOP.

*Instructor :* V. O. CLARKE.

In this department the course of instruction consists of a series of graduated exercises, on lathe and bench, arranged to familiarise the student with cutting and jointing operations in wood, and general engineering pattern making. The students are only allowed to use the lathes and hand machines in this department, the other machines being dangerous; the uses of these machines are, however, fully demonstrated during the session.

*Exercises.*—Sawing, and parallel planing, halved, tenon, mortice, and dovetail joints, frame work. Lathe work, and general engineering pattern making.

## SMITHY.

*Instructor.* R. GODWIN.

Exercises in bending and shaping bar iron, welding, forging, rings and chains, forging chisels and tools, hardening and tempering of steel. Forging under the Power Hammer.

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## FOUNDRY.

*Instructor:* W. R. BATES.

Moulding in green sand, dry sand, and loam, core-making. Charging and working the Cupola. Mixing, melting, and casting iron, brass and gun-metal.

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## CIVIL ENGINEERING.

THE UNIVERSITY, EDBGASTON.

*Professor* : STEPHEN M. DIXON, M.Sc. ; M.A., B.A.I.  
 (Dub.), M.Inst.C.E.

*Lecturer* : F. H. HUMMEL, M.Sc., A.M.Inst.C.E.

*Assistant Lecturer and Demonstrator* : JOHN PURSER, B.A.

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The courses of study in the department are carried on by lectures, workshop, drawing, laboratory exercises, and field work, the object being to give the student a thorough training, both theoretical and practical, in those subjects, a knowledge of which is necessary in the practice of the profession of Civil Engineering.

The Strength of Materials and Hydraulic Laboratories are in this department, and are being equipped in the most complete manner for investigating the laws of elasticity and strength of materials in tension, compression, bending, straining, and torsion, and for experimental work in Hydraulics.

In the Strength of Materials Laboratory the equipment already in working order and being erected consists of the following apparatus :—A horizontal testing machine of 700,000 lbs. capacity for making tension, compression, and bending tests on full-sized structural members up to twenty-five feet in length ; a 200,000 lbs. vertical testing machine for tension and compression tests, and capable of testing beams sixteen feet long ; a testing machine of 122,000 lbs. capacity for tension, compression, and bending tests ; a 5,000 lbs. wire testing machine ; an impact testing machine ; a torsion machine, capacity 10,000 inch lbs. ; apparatus for measuring deflections of beams under various loads ; complete apparatus for testing cements, mortars, bricks, and building stones.

In the Hydraulic Laboratory experiments are made on the flow of water in pipes and open channels, efficiency of turbines and pumps, forms of orifices, and effects of various kinds of resistances. The equipment consists of a steel tank, four feet square and thirty feet high, for experiments on jets and flow of water under small heads ; two steel measuring tanks, each of about two hundred and fifty cubic feet capacity ; a twenty h.p. duplex differential pump capable of dealing with 600 gallons per minute, and a maximum head of 250 feet ; a twenty h.p. centrifugal pump ; a six h.p. centrifugal pump ; a nine h.p. Pelton wheel ; a double vortex turbine, three h.p. ; a Gerard turbine, eight h.p. ; an eddy current brake ; a Froude water dynamometer ; hydraulic accumulator and three-throw pump ; weirs and meters ; standard orifices and nozzles ; mercury gauges.

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## LECTURE AND LABORATORY COURSES IN CIVIL ENGINEERING.

Second Year.

*COURSE VII.*

LAND SURVEYING.

Wednesdays and Fridays, 2 to 5, throughout the Session.

FEE : £9 9s.

The work of this course is carried on throughout the year by lectures, field work, and drawing, the time devoted to it being six hours each week. The use and adjustments of the various surveying instruments are discussed in the class room, and surveys are carried on in the field, while in the drawing office, plans, profiles, and contour maps are made.

## Third Year.

## COURSE VIII.

## STRENGTH OF MATERIALS AND HYDRAULICS.

(a) *Strength of Materials.*

Tuesdays and Thursdays, at 11, during the Winter and Spring Terms.

In this course the following subjects are discussed in class :—(a) Tension. Behaviour of materials in tension, stress-strain curves, elastic limit, yield point, and breaking load. Effects of impact and repetition of stress. Strength of pipes and thin cylinders. (b) Compression. Short struts, strength of long columns, Euler's formula and formulae derived from experiments. (c) Bending. Neutral axis, moment of resistance, moment of inertia, graphic methods. The design of beams and simple plate girders for various systems of loading. (d) Shear. Properties of shear, stress and strain, shear modulus, and strength of materials in shear. (e) Torsion. Strength and stiffness of shafts.

(b) *Hydraulics.*

Tuesdays and Thursdays, at 11, during the Summer Term.

A course of fourteen lectures in the third term, the subjects discussed being : General principles ; the laws of flow of water and methods of measurement ; hydraulic resistances ; flow of water in pipes and channels.

FEE : £4 4s.

## COURSE IX.

## RAILWAY AND HIGHWAY ENGINEERING.

(a) *Railway Work.*

Mondays, 11, Wednesdays, 10, and Fridays, 2 to 5, during the Session.

FEE : £6, 6s.

Preliminary and location surveys. Curves for railways, tramlines, roads and sewers.

Setting out work, computations of quantities, excavation, tunnelling, permanent way, and construction and maintenance of streets and roads. In the drawing office the field notes taken during the survey carried out in the vacation are plotted, and detailed drawings are made of smaller railway structures.

(b) *Masonry and Foundations.*

The subjects discussed will be masonry materials, foundations, walls, culverts, arches.

(c) *Structural Details.*

Mondays 2 to 5, throughout the Session.

FEE : £4 4s.

This course is a series of exercises in design to supplement courses on strength of materials and masonry. In it will be worked out details of a design of a right masonry arch, including abutments, foundations, centres, and bill of quantities, and also details and working drawings of a roof truss and a simple highway bridge truss.

(d) *Railway Field Work and Drawing.*

Three weeks in Summer.

FEE : £5 5s.

The field work of this course will be carried out in three weeks of the long vacation. During this time the work will be conducted from a camp, and will consist of preliminary and location surveys for a short line of railway. The work will be carried on systematically and under strict supervision, and each student will be required to work nine hours per day, the instrument men being required in addition to keep maps and profiles showing each day's progress.

## Fourth Year.

## COURSE X.

## THEORY OF STRUCTURES AND DESIGNING.

(a) *Theory of Structures.*

Tuesdays and Thursdays, at 12, throughout the Session.

FEE : £4 4s.

A course of fifty lectures in the fourth year. The subjects discussed are :—Pressure of earth, ellipse of stress, design of retaining walls, hydrostatic and geostatic arches, Alexander and Thompson's method of the catenary. Masonry dams, tunnels. Design of plate girders and riveted and pin-connected trusses. Continuous girders, cantilevers, swing bridges, metal arches, with and without hinges. The work of these lectures is closely followed by that of the next course.

(b) *Designing.*

Mondays, Wednesdays, and Thursdays, 2 to 5.

FEE : £12 12s.

In this course the instruction given in (a) is supplemented by work in the drawing office. Students are required to make complete designs for the following engineering structures :—Winter Term, retaining walls and masonry arch ; Spring Term, steel railway bridge ; Summer Term, steel arch hinged at crown and springings. Besides these designs numerous graphical exercises illustrating the work of the lectures will be required.

## COURSE XI.

## HYDRAULIC ENGINEERING.

(a) *Hydraulic Engineering.*

*Lectures.*—Tuesdays and Thursdays, at 11, designing Wednesdays, 10 to 1, throughout the Session.

FEE : £8 8s.

The work of this course is carried on by lectures and drawing, and treats of the following subjects :—

- (i.) Flow of water in pipes ; sources, storage, and filtration of water ; details of reservoir construction ; distribution of water.
- (ii.) Flow of water : open channels ; canals and rivers ; river regulation ; irrigation.
- (iii.) Principles of drainage ; sewers and sewerage ; various systems of sewage disposal.
- (iv.) Hydrographic surveying ; tidal phenomena ; waves and coast defence.

*(b) Hydraulic Power Engineering.*

Tuesdays and Fridays, at 10, Summer Term.

FEE :—£3 3s.

Hydraulic cylinders, packing, joints, and valves. Accumulator lifts, cranes, presses. Hand, power, and steam pumps. Motors, water wheels, and turbines.

*COURSE XII.*

*CITY SURVEYING.*

Saturdays, 10 to 1, throughout the Session.

FEE : £5 5s.

This course consists of a series of exercises in the field and drawing office, carried out by students in the fourth year, the time devoted to it being three hours per week.

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## LABORATORY COURSES IN STRENGTH OF MATERIALS AND HYDRAULICS.

### Third Year.

(a) *Elementary Course in Strength of Materials.*

Tuesdays, 2 to 5, Winter Term

FEE : £3 3s.

This course is arranged for all engineering students, and the following series of experiments is made : measurements of centrifugal force, energy of rotation, the laws of friction, and the efficiency of machines, deflection of beams, wire testing, cement testing.

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### Fourth Year.

(b) *Testing of Masonry and Timber.*

Fridays, 2 to 5, during Winter and Spring Terms.

FEE : £6 6s.

This course is arranged as a series of laboratory exercises for the course on masonry and foundations. A regular series of tests of cement is made according to the British and foreign standards, and concrete, bricks, building and paving stone, and timber are also tested.

(c) *Advanced Laboratory Course in Strength of Materials and Hydraulics.*

Mondays, 2 to 5, during the Winter and Spring Terms.

FEE : £6 6s.

This is a short course arranged for all engineering students, and in it the following work is carried on : systematic tests of various metals, tension and investigation of the elastic properties, compression tests of small metal cylinders, transverse tests of cast iron and

wood, strength and elasticity of various metals in torsion, impact tests. Flow of water through orifices and weirs ; tests of meters ; measurements of hydraulic resistance, pipes, bends, valves ; efficiency tests of various types of pumps and motors.

(d) *Advanced Laboratory Course in Strength of Materials and Hydraulics.*

Mondays. 2 to 5. Summer Term.

FEE :—£5 5s.

This additional course, arranged for civil engineering students, is as follows : Investigation of influence of the proportion of a specimen on its strength and elongation in tension. Elastic tests on standard bars. Properties of materials strained beyond elastic limit. Effects of rate of loading. Compression of wood, stones, and concrete. Elasticity on compression. Tests of struts. Hardness tests by indentation.

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## ELECTRICAL ENGINEERING.

THE UNIVERSITY, EDGBASTON.

*Professor*: GISBERT KAPP, M.Sc., D.Eng., M.Inst.C.E..  
M.Inst.E.E.

*Lecturer*: J. DENNIS COALES, B.Sc., A.M.Inst.E.E.

*Assistant Lecturers and Demonstrators*: E. J. KIPPS,  
A.M. Inst.E.E.; W. LULOFS, D.Eng..

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The course for Electrical Engineering students is the same as that for Mechanical Engineers for the first two years, and only differs in the third and fourth years in the increased time spent in the electrical engineering laboratory and on the design of examples of electrical machinery and apparatus.

The Electrical Engineering Laboratory is provided with appliances for all classes of electrical testing work.

Advanced students are encouraged to take up some line of investigation of technical interest, for which every facility is provided.

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## LECTURE COURSES.

Third Year.

COURSE XIII.

### ELECTRICAL ENGINEERING.

*Lecture Days*.—Tuesdays and Thursdays at 12, and Saturdays at 10.

FEE: £6 6s.

One hour a week is devoted to the working out of simple electrical engineering problems.

*Principles of Electric and Magnetic Action*.—Elementary theory of potential. Lines of force. Electric and magnetic fields. Carrying force of magnets. Energy of

magnetic field. Force between current and magnet and between two currents. Exciting force and resulting field. Applications to dynamos. Electrostatic attraction. Theory of electric images and its application to the determination of the capacity of aerial lines and cables. Absolute system of measurement. Relation between the electrostatic and electro-magnetic systems. Practical units. Induced E.M.F. and application to dynamos.

*Continuous Currents*.—Generation by mechanical, thermal, and chemical means. Energy of an electric circuit. Power of a current. Varying currents. Time constant.

*Alternating Currents*.—Vector diagrams. Generation by mechanical means. Frequency. Effective value. Form factor. Power. Power factor. Wattless currents. Self-induction and impedance. Application to choking coils. Natural frequency.

*Materials*.—Resistance. Specific resistance and temperature—Co-efficient of conductors. Heating of single conductors and coils. Magnetic quality of iron. Hysteresis and eddy current losses. Insulating materials. Construction of resistances.

*Measurements*.—Standards of resistance and E.M.F. Test-room instruments. Potentiometer. Shunted amperemeters. Electricity meters. Ballistic galvanometer. Tests for conductivity, insulation, magnetic flux, self-induction and capacity. Magnetic tests of iron. Photometry.

*Continuous Current Dynamos*.—Simple forms of armature windings. Calculation of voltage. Field magnet windings. Compounding characteristics. Regulation. Motors for special purposes. Losses in dynamos. Efficiency.

*Alternators*.—Armature winding for single and polyphase currents. E.M.F. curve. Calculation of effective E.M.F. characteristics. Transformers. Elementary theory of synchronous and induction motors.

*Installations*.—Small isolated plant. Use of batteries. Parallel running of continuous current dynamos. Switch-

boards. Arrangement of generating plant. Short distance power transmissions by direct current. Cost of working.

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#### Fourth Year.

##### COURSE XIV.

#### ELECTRICAL ENGINEERING.

*Lecture Days.*—Tuesdays, Wednesdays, and Thursdays, at 10.

FEE : £6 6s.

One hour a week is devoted to the working out of more advanced electrical engineering problems.

*Design of Continuous Current Dynamos.*—Armature windings. Commutation. Field winding. Commutating Coils. Heating and ventilation. Losses. Efficiency and its experimental determination. Mechanical construction. Types for special purposes.

*Design of Alternators and Transformers.*—Determination of the E.M.F. and current curves. Harmonic analysis. Armature winding. Heating and ventilation. Losses. Efficiency. Characteristics. Short circuit current. Drop. Mechanical construction. Parallel running. Hunting. Influence of damping coils. Theory of transformers. Core and shell types. Inductive and ohmic drop. Methods of cooling. Special designs for large output and high pressure. Mechanical construction.

*Design of Alternating Current Motors.*—Synchronous Motors and Converters. Induction Motors. Commutator Motors.

*Continuous and Alternating Current Circuits.*—Influence of capacity, and self induction. Resonance. Free and damped oscillations. Lightning protection. Protection against disruptive discharges. Design of long distance transmission lines.

*Central Stations and Distribution of Current.*—Selection of system. Arrangement of machinery and switch

gear in Power House. Use of batteries. Boosters. Sub-stations. Electrical tramways and railways. Feeders and distributing mains. Cost of working Meters and tariffs.

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### ELECTRICAL LABORATORY COURSES.

#### Third Year.

##### *COURSE XIII. (1).*

*Electrical Engineers.*—Six hours a week, Thursdays and Fridays, 2 to 5.

FEE : £12 12s.

*Civil and Mechanical Engineers.*—Three hours a week, Thursdays 2 to 5.

FEE : £6 6s.

Magnetic field of currents and magnets. Carrying capacity of wires. Fuse testing. Heating of wires and coils. Exact comparison of electrical instruments. Measurement of resistance and conductivity. Insulation resistance. Resistance of armature windings. Magnetic testing. Intensity of magnetic field in air-gaps of machines. Forces on currents in magnetic fields. Torque of motor at rest. Tests on arc and glow lamps. Meter testing and calibration. Capacity of storage cells at different rates of discharge. Tests on the characteristics of different kinds of direct current motors and dynamos. Efficiency. Separation of losses in electrical machinery. Speed regulation. Alternating currents, elementary tests. Power factor. Use of Watt-meter.

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#### Fourth Year.

##### *COURSE XIV. (A).*

*Electrical Engineers.*—Six hours a week during three terms. Mondays, 10 to 5.

FEE : £12 12s.

*Mechanical Engineers.*—Three hours a week during Winter and Spring Terms. Wednesdays, 2 to 5.

FEE : £6 6s.

The work in the Laboratory is arranged to give students an opportunity of testing practically the conclusions arrived at theoretically in the corresponding lectures. Students make accurate measurements on machines, transformers, batteries, cables and instruments, the tests being arranged to correspond with the requirements of practical work.

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### DRAWING AND DESIGNING.

Third Year.

*COURSE XIII. (B.).*

Three hours a week. Mondays, 2 to 5.

FEE : £3 3s.

In the Winter term the work is the same as for Mechanical Engineers (Course III.), and during the Spring and Summer terms students make drawings from patterns of electrical machinery and apparatus, and parts thereof.

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Fourth Year.

*COURSE XIV. (B.).*

Mechanical Designs, three hours a week throughout the Session.

FEE : £4 4s.

Electrical Designs, three hours a week in the Winter and Spring terms, and nine hours a week in the Summer term.

The work done in this course consists in the calculations, designs, and preparations of working drawings of generators, motors, transformers, and other apparatus to definite specifications, and the design of complete installations.

## METALLURGY.

UNIVERSITY BUILDINGS, EDGBASTON.

*Professor:* THOMAS TURNER, M.Sc.; A.R.S.M., F.I.C.

*Lecturer and Instructor in Assaying:*

O. F. HUDSON, B.Sc.; A.R.C.S.

*Assistant Lecturer and Demonstrator:*

D. M. LEVY, A.R.S.M.

*Special Lecturer in Metallography:* O. F. HUDSON, B.Sc.

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The Metallurgical Department provides instruction for those engaged in or connected with the staple metal industries of this country, and also trains men who propose to follow a metallurgical career in the colonies or in any other part of the world.

The courses of study are intended to meet the requirements of

1. Metallurgists, who devote the greater part of their time to metallurgy.
2. Metallurgical chemists, who specialize in chemistry.
3. Metallurgical engineers, who devote most of their time to engineering.
4. Mining and Geological students, who follow the courses prescribed in their respective departments.
5. Dental students.
6. Others interested in Metallurgy.

The courses of study include lectures, laboratory teaching, practical work in the smelting laboratories, and visits to works.

The instruction is given at the new buildings of the University at Bournbrook, the postal address of which is The University, Edgbaston, Birmingham.

The buildings occupied by the Metallurgical Department are in two separate portions, one situate in the main building, and the other in a self-contained block near the power house. The former comprises the lecture rooms, laboratories, and museums, while the latter includes the smelting laboratories. In the main building about 20,000 square feet of floor space is devoted to metallurgy. The department is chiefly placed on the main ground floor, on which there is a spacious and well-lighted suite of sixteen rooms, including elementary and advanced laboratories capable of accommodating sixty students at one time; separate dry assay and balance rooms; a lecture theatre, and advanced class room and library. There are also rooms devoted to ore sampling, metal preparing, pyrometry, metallography, and electro-metallurgy; together with chemical stores, Professor's office, and Lecturers' private room. This portion covers 13,000 square feet, while upwards of 6,000 square feet on the first floor is devoted to museum and similar purposes. The separate smelting laboratory includes a steel section with a two-ton new form Siemens' furnace with electric hoist, crane, ladle, ingot pit and boiler. There is also a section of similar area devoted to the smelting of metals other than iron and steel, the plant in which includes a hand-fired reverberatory furnace, a Brückner roaster, a water jacketed blast furnace, a cupellation furnace, a cyanide plant for gold ores, a chlorination equipment, and a filter press plant. Smaller rooms are employed as brass and steel foundry, and as an electric smelting laboratory respectively. Immediately adjacent are the power house, the iron foundry, the smith's shop, and the Mond gas plant of the Engineering Department.

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## LECTURE COURSES.

### *I. JUNIOR COURSE.*

A Course of twenty lectures will be delivered on Saturdays at 10 during the Winter and Spring Terms. During the Winter and Spring Terms a Practical Class is held in the Laboratory on Saturday mornings from 11 to 1 for Dental students, or on Tuesdays from 2 to 5 for others throughout the Session. This Course is intended to serve as an introduction to Metallurgy, and will also cover the ground required by students of Dentistry.

#### Syllabus.

##### PART I.

Physical, Mechanical, Chemical, and Electrical Properties of the Common Metals. Properties of Alloys. Melting, Casting, and Working of Metals. Varieties of Furnaces. Furnace Materials. Slags and Fluxes. Metallurgical Terms. Fuel. Gaseous Fuel. Gas Furnace.

##### PART II.

Preparation, Properties, and Uses of the following:—Gold, Silver, Mercury, Copper, Tin, Zinc, Lead, Iron, Platinum, Iridium, Palladium, Cadmium, Bismuth, Aluminium, and Nickel, together with their chief alloys, and amalgams.

FEE for the Course : Lectures and Laboratory, £3 3s.

TEXT BOOKS RECOMMENDED.—HUNTINGTON and MACMILLAN'S *Metals* (Longman); SMITH'S *Dental Metallurgy*.

### *II. GENERAL COURSE.*

This Course is intended to give a general outline of the subject, and is attended by Metallurgical and Engineering students in their second year. The Lectures are delivered on Tuesdays and Thursdays at 11 throughout the Session.

#### Syllabus.

- (a) INTRODUCTORY.—Physical, Mechanical, and Chemical Properties of Metals. Nature of Alloys. Metallurgical

Terms and Processes. Classification of Furnaces. Furnace Materials :—Acid, Basic, and Neutral. Composition of Fire Clay. Manufacture and Testing of Fire-bricks and Crucibles. Slags and Fluxes. Composition and Character of Slags. Utilization of Slag. Calculation of Furnace Charges. Physical and Chemical Properties of Fuel. Principles of Combustion. Calorific Power and Intensity. Calorimeters. Pyrometers and Pyrometry. Gaseous Fuel. Preparation of Coke, Charcoal, and Patent Fuels. Electric Furnaces.

- (b) IRON AND STEEL.—Composition, Characters, and Preliminary Treatment of Iron Ores. Manufacture of Cast Iron. The Blast Furnace. Details of Construction and Working. Furnace Burdens. Subsidiary Appliances. Theory of the Blast Furnace. Chemical and Mechanical Properties of Cast Iron. Foundry Practice. Manufacture of Wrought Iron. Chemistry of the Puddling Furnace. Properties of Wrought Iron. Manufacture and Properties of Steel. Puddled, Blister, Shear, and Crucible Steel. Bessemer and Siemens' Steel. The Basic Process. Other important Steel Processes. Chemical Composition and Mechanical Testing of different varieties of Iron and Steel.
- (c) METALS AND ALLOYS.—Preparation, Properties, and Principal Alloys of Copper, Zinc, Tin, Antimony, Bismuth, Nickel, Aluminium, Gold, Silver, Lead, Mercury, and Platinum. Principles of Electro-Metallurgy. The more important Electro-Metallurgical Processes. The Microscopic Examination of Metals.

FEE for the Course : £4 4s.

TEXT BOOKS RECOMMENDED.—ROBERTS-AUSTEN'S *Introduction to Metallurgy* (Griffin); TURNER'S *Iron* (Griffin). For Electro-Metallurgical Work :—MACMILLAN'S *Electro-Metallurgy* (Griffin).

It will be necessary to assume that students taking this Course possess some knowledge of Chemistry and Physics.

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### III. SENIOR COURSE.

A Course of about sixty Lectures for senior students is given each session. The class will meet throughout the session on Monday and Friday afternoons, at 4, or by arrangement.

The Course may be somewhat modified to meet the requirements of the students who attend; the general classification will be as follows:—

1. Fuel, Pyrometry, Calorimetry, Combustion, Gaseous Fuel.
2. Metallography: including the nature and structure of alloys.
3. Steel: including special steels, microscopic examination, heat treatment, &c.
4. Foundry practice, including Iron, Brass, and other metals and alloys.
5. Gold and Silver, Copper, Lead and other Metals.
6. The Design and Equipment of Metallurgical Works.

FEE: £4 4s.

TEXT BOOKS RECOMMENDED.—COLLINS' *Silver* (Griffin); HARBORD'S *Steel* (Griffin); ROSE'S *Gold* (Griffin); OSMOND'S *Metallography* (Griffin); RICHARD'S *Metallurgical Calculations* (McGraw Publishing Co.).

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### Practical Metallurgy.

The course of study in the laboratories is designed with the object of teaching the properties of the materials used by the metallurgist, and the changes which take place during the production of metals and alloys.

Instruction is given in the properties of metals, alloys, ores, slags, and other metallurgical products; in assaying; in the reactions which underlie various metallurgical processes; and in pyrometry and metallography.

All students work independently, and as far as practicable at the hours best suited to their arrangements. Special facilities will be offered to proprietors, managers, and others engaged in technical or professional work, who desire either to study the technology of their subject, or to work out improvements. Students may commence work in the laboratory at any time. Senior students are encouraged to undertake research work bearing upon their intended future avocations.

*SYLLABUS OF PRACTICAL METALLURGY AND ASSAYING.*

*GENERAL COURSE LABORATORY.—PART I.*

**FUEL.**—Commercial Analysis, including Ash, Moisture, Sulphur, Coke, and Calorific Power.

**FURNACE MATERIALS.**—Examination and testing of fire-clay.

**METALS AND ALLOYS.**—Properties of Copper, Zinc, Tin, Lead, &c. Preparation of different varieties of Brass, Bronze, &c.

**OXIDATION AND REDUCTION.**—Experiments illustrating the use of oxidising and reducing agents in metallurgy. Lead Assay.

**SLAGS AND FLUXES.**—Experiments illustrating the composition, formation, and melting points of slags.

**IRON ASSAY.**—Assay of Iron Ores for Iron, Silica, Phosphorus, Moisture, and Loss on Ignition.

**SILVER.**—Determination of Muffle Temperatures. Experiments with Cupellation. Preparation of Silver Alloys. Assay of Silver Bullion and Silver Ores.

**GOLD.**—Assay of Gold Ores, Lemel, and Bullion.

*GENERAL COURSE LABORATORY.—PART II.*

Students select from the following, among other, subjects of further instruction,

**FUEL.**—Complete Analysis of Coal, Coke, &c. Gas Analysis as applied to metallurgical operations.

**PYROMETRY.**—Measurements of High Temperatures.

**CALORIMETRY.**—Use of more accurate Calorimeters.

**FURNACE MATERIALS.**—Chemical and Physical tests of Clay, and other fire-resisting materials.

**IRON AND STEEL.**—Complete Analysis of Iron Ores, Cast Iron, Wrought Iron, and Steel, Preparation and Properties of various Irons, Steels, and Ferro-Alloys.

**COPPER.**—Assay of Copper Ores; Preparation, Properties, and Analysis of Brass, Bronze, German Silver, and other Copper Alloys.

**TIN, LEAD, ZINC, ANTIMONY, NICKEL, COBALT, AND ALUMINIUM.**—Assay of Ores and Analysis of Commercial Metals and of most important Alloys.

**ELECTRO-METALLURGY.**—Electro-deposition of Gold, Silver, Copper, Brass, and Nickel. Electro-refining of Metals, Electric Smelting.

**MICROSCOPY.**—Preparation of Samples and Examination of Metals under the Microscope. Micro-Photography.

### Smelting Laboratories.

Courses of Practical Work, extending over about five or six weeks in all, will be arranged during the Vacations, to enable students to take part in the working of the Siemens' furnace, the blast furnace, the gold and silver plant, the iron foundry, and other appliances. The plant will also be employed for teaching and experimental work throughout the session.

LABORATORY FEES : For each hour a week throughout the Session, £1 1s.

The above fees entitle the student to work in the Smelting Laboratories. The time to be so spent will be determined by the Professor, and it may be during term or in vacation as may be found necessary. As a rule not more than one-sixth of the student's time may be spent in the smelting laboratories without additional payment at the rate of one guinea per week. For students taking the smelting laboratory only the fee is 25s. per week, with a minimum of £5 5s., which includes entrance fee. The accommodation in this section is limited, and only such students will be admitted as are able to satisfy the Professor that their previous training has been such as will enable them to profit by the instruction.

For Engineering students the fee for the Practical Class throughout the session, three hours weekly, together with occasional work in the smelting laboratory, is £4 14s. 6d.

Gas, fuel, water, and ordinary reagents are supplied by the University, but students must provide themselves with a small set of Apparatus ; also with crucibles, and with materials when large quantities are required.

TEXT BOOKS RECOMMENDED.—BERINGER'S *Text Book of Assaying* (Griffin); BREARLEY AND IBBOTSON—*Analysis of Steel Works Materials* (Longmans); HOWE'S *Metallurgical Laboratory Notes* (Sauveur and Whiting).

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## VISITS TO WORKS.

Excursions to Metallurgical Works are arranged throughout the Session. Such visits will usually be in connection with the University Metallurgical Society. The number and variety of Metallurgical industries in the district afford an unusually good opportunity of seeing important processes in operation.

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## TIME TABLE.

METALLURGY.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Lectures—						
Course I. ....	...	...	...	...	...	10.0
Course II. ....	...	11.0	...	11.0	...	...
Course III. ....	4.0	...	...	...	4.0	...
Practical Classes—						
Engineering Students	...	...	2.5	...	...	...
Junior Course	...	2.5	...	...	...	...
Dental Students ...	...	...	...	...	...	11.1
Laboratory—open (For General and Senior Courses)	10.5	10.5	10.5	10.5	10.5	10.1

*REQUIREMENTS FOR DEGREES.*

Candidates for the Degree of B.Sc. in Metallurgy must be matriculated students of the University before commencing their degree course, and must, after matriculation, attend the prescribed courses of study for at least three academic years.

The work for the first year, or Intermediate Examination, for those who propose to become Metallurgists, is as follows :—

Mathematics, Course I. (Pure).

Physics, Lectures, Course I. and Laboratory.

Chemistry, Lectures, Course I. (A) and Laboratory.

Engineering, Drawing, and Workshop.

Metallurgy, Junior Course, Lectures and Laboratory.

The subjects of the Second Year Metallurgical Course are as follows :—

*Metallurgy.* Lectures (General Course), two lectures weekly.

Laboratory. At least nine hours, by arrangement.

*Engineering.* Lectures. Course I., two lectures weekly.

Drawing. Three hours weekly.

Workshop. Three hours weekly.

*Chemistry.* Laboratory. Three hours weekly, by arrangement.

*Geology.* Lectures (Course I.), three lectures and two hours laboratory, weekly.

The subjects of the Third Year's Courses for Metallurgists are as follows :—

*Metallurgy.* Lectures (Senior Course), two hours weekly.

Laboratory, at least fifteen hours per week.

*Metal Mining.* Courses I.A and II.A together with Mine Surveying and Metal Mining Laboratory. (See Syllabus of Mining.)

The following alternative course may be taken by students who desire to become Metallurgical Chemists :—

#### FIRST YEAR.

Mathematics, Course I. (Pure).

Physics, Lectures, Course I. and Laboratory.

Chemistry, Lectures, Course I. (A and B) and Laboratory.

Engineering, Drawing, and Workshop.

Metallurgy, Junior Course, Lectures and Laboratory.

#### SECOND YEAR.

*Metallurgy.* Lectures (General Course), two lectures weekly.

Laboratory. At least nine hours, by arrangement.

*Engineering.* Lectures. Course I., two lectures weekly.

Drawing. Three hours weekly.

Workshop. Three hours weekly.

*Chemistry.* Lectures (Course II. B) in General and Physical Chemistry.

Laboratory. Six hours weekly, by arrangement.

#### THIRD YEAR.

*Metallurgy.* Lectures (Senior Course), two lectures weekly.

Laboratory. Fifteen hours weekly, by arrangement.

*Chemistry.* Lectures (Course III. C) in General and Physical Chemistry.

Laboratory. Nine hours weekly, by arrangement.

Students must in addition afford satisfactory evidence that they have during their course of study regularly attended, for a period of at least equal to a University term, at some metallurgical establishment previously approved by the Professor. They will be expected to give full and accurate descriptions of the plant and of the processes in which they have taken part, and in the final examination marks will be awarded for this part of the work. Attendance can be conveniently made during University vacations, or in connection with the Vacation Courses in Metallurgy, attendance at which will be accepted for not more than two months of the required period.

Students who propose to take Metallurgy as a double subsidiary subject take the General Course Lectures and Laboratory in their second year; they take the Senior Metallurgical Lectures in their third year, and a portion of Practical Metallurgy (Part II.) selected after consultation with the Professor under whom they are principally engaged. They are also recommended to take a Vacation Course in the Smelting Laboratory.

Mining and Geological students, and those who take Metallurgy as a single subsidiary subject, take the General Course Metallurgical Lectures, and also Practical Metallurgy (General Course, Part I.) together with such portions of Part II. as may be of special importance in any particular case.

Engineering students take Metallurgy (Lectures, General Course) in their second year, and a Special Laboratory Class, which will meet on Wednesday afternoons from 2-5 throughout the Session.

Dental students take the Junior Course, Lectures and Laboratory.

*Manufacturers or Managers of Works having vacancies are requested to apply to the Professor.*

TIME TABLE OF FIRST YEAR COURSE FOR DEGREE IN METALLURGY

SUBJECTS.	CLASS HOURS.				
	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
<b>METALLURGY.</b>					
Lectures, Course I.	...	...	...	...	...
Laboratory	...	...	2.0—5.0	...	...
<b>MATHEMATICS—</b>					
Course I. (Pure)	...	12.30	11.30	...	11.30
Physics—					
Course I.	...	...	11.30	11.30	...
Laboratory	...	...	3.0—5.0	...	...
<b>CHEMISTRY.</b>					
Lecture, Course I. (A) <i>(Winter and Spring Terms only)</i>	0.30	9.30	9.30	9.30	...
Laboratory	...	...	...	...	2.30—5.0
<b>ENGINEERING—</b>					
Drawing	...	...	...	2.0—5.0	...
Workshop	...	...	...	...	2.0—5.0

†The lecture hour for Course I. will be Saturday, at 10, during the Winter and Spring Terms, or by arrangement.

COMPOSITION FEE : £30.

## TIME TABLE OF SECOND YEAR COURSE FOR METALLURGISTS.

SUBJECTS.	CLASS HOURS.					
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
METALLURGY— Lectures, Course II. Assaying and Smelting Laboratories (12 hours)	...	11.0 <i>By arrangement.</i>	... <i>By arrangement.</i>	11.0 <i>By arrangement.</i>	... <i>By arrangement.</i>	... <i>By arrangement.</i>
CHEMISTRY— Laboratory (3 hours)				<i>By arrangement.</i>		
GEOLOGY— Lectures, Course I.	...	...	9.30	...	9.30	9.30
ENGINEERING— Lectures, Course I. Drawing (3 hours) Workshop (3 hours)	...	...	4.0 <i>By arrangement.</i>	...	4.0 <i>By arrangement.</i>	...

COMPOSITION FEE : £35.

## TIME TABLE OF SECOND YEAR COURSE FOR METALLURGICAL CHEMISTS.

SUBJECTS.	CLASS HOURS.					
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
METALLURGY— Lectures, Course I. .... Assaying and Smelting Laboratories (12 hours) ...	...	11.0	...	11.0 <i>By arrangement.</i>	...	...
CHEMISTRY— Lectures, Course II. B. Laboratory (6 hours)	...	...	...	...	...	...
ENGINEERING— Lectures, Course I. .... Drawing (3 hours) ... Workshop (3 hours) ...	...	4.0 }	...	4.0 <i>By arrangement.</i>	...	...

COMPOSITION FEE : £35.

### TIME TABLE OF THIRD YEAR COURSE FOR METALLURGISTS.

SUBJECTS.	CLASS HOURS.				
	Mon.	Tues.	Wed.	Thurs.	Fri.
<b>METALLURGY—</b>					
Lectures, Course III.	... ... Assaying and Smelting Laboratories (18 hours) ...	4... ... By arrangement.	... ... ...	... ... ...	4.0 ... ...
<b>MINING—</b>					
Lectures, Course I A.	... ... ... Mine Surveying	2.0 12--1 ... ...	(Spring and Summer only). ... ... 2.30--4.30	... ... ... ...	... ... ... 10.0—5.0
Course II A.	... ... ... Metal Mining Laboratory (including Mineralogy).	... ... ... ...	... ... ... ...	... ... ... ...	... ... ... ...

## TIME TABLE OF THIRD YEAR COURSE FOR METALLURGICAL CHEMISTS.

SUBJECTS.	CLASS HOURS.					
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
<b>METALLURGY—</b>						
Lectures, Course III,	... 4.0	... ...	... ...	... ...	4.0 ...	...
Assaying and Smelting Laboratories (18 hours) ...						
<b>CHEMISTRY—</b>						
Lecture, Course III C,	... ...					
Laboratory (9 hours)	.. ...					

COMPOSITION FEE: £30.

**MINING.**  
THE UNIVERSITY, EDGBASTON.

**COAL AND METAL MINING.**

*Professor* : R. A. S. REDMAYNE, M.Sc. ; M.I.M.E. ;  
M.I.M.M. ; M.A.I.M.E. ; F.G.S.

*Lecturer in Surveying and Demonstrator in Coal Mining* :  
*(Vacant).*

*Demonstrator in Metal Mining and Lecturer in  
Mineralogy* : E. T. BORLASE, B.Sc.

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The time of the mining students at the University is not entirely devoted to theoretical work ; much of it is of a thoroughly practical character. There are occasional visits to the mines of the neighbourhood, and either a few weeks are devoted by the students each year, in company with the Professor, to the inspection and study of some group of British or Foreign mines, to a School of practical surveying at a mine, or arrangements are made for the students to have from two to three months' practical experience at a mine.

The courses have been so arranged as to meet the requirements of those who intend to become :—

- 1.—Practising and Consultative Mining Engineers, when a thorough knowledge of mining *in all its branches* is necessary ;
- 2.—Colliery Managers ;
- 3.—Managers of Metal Mines ;
- 4.—Teachers of Mining ;
- 5.—Mine Surveyors ;
- 6.—Land and Estate Agents ;
- 7.—Landowners, owners of Collieries, and those generally interested in mines and quarries.

**CERTIFICATE OR DIPLOMA IN MINING.**

Students who desire to obtain the Diploma in Coal Mining must take the special lecture and laboratory courses laid down under the headings Courses I. and II.\* extending over two years, together with certain lectures and laboratory work in the allied sciences. The complete courses are described on page 308.

They must further have practical experience in a mine for at least a couple of months in each year, or have had a minimum of four months of such experience prior to entering on the Diploma Course, in order to enable them to take the Diploma in Mining. But time spent by the students in visiting mines (underground) in company with the Professor, or during the Summer School, counts towards the four months required. The time spent will, however, only be taken as an alternative for so much of the four months' practical experience as it is fairly equivalent to.

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*SUMMER SCHOOL.*

A few weeks of each long vacation may be devoted to visiting and making a thorough inspection of the mines in some metalliferous or coal mining district, either in Britain or abroad, or to practice in metalliferous mine surveying. The students are required to take detailed daily notes, and to furnish a full report upon the termination of the school. The fee for this practical course is £5 5s. od. The Summer School may sometimes take the form of two to three months' practical experience at a mine.

**B.Sc. DEGREE IN MINING**

(in which is comprehended the Diploma in Mining).

Candidates for a Degree in Mining are required to be matriculated in the Faculty of Science before entering on the courses of study for the degree. After matriculation,

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\* With the exception of Course II. in Mathematics.

students are required to attend courses of study in coal and metal mining\* and the allied sciences, for a period of at least three years, and to have had the practical experience specified under the heading "Certificate or Diploma in Mining."

#### CERTIFICATES OF COMPETENCY UNDER THE COAL MINES REGULATION ACT.

The clause of the Coal Mines Regulating Act regarding the granting of Certificates of Competency to intending Colliery Managers was on June 30th, 1903, so amended as to allow of a *diploma* (gained after a course of study of at least two years in scientific and mining subjects, at a University, University College, Mining School, or other Educational Institution approved of by a Secretary of State), or a *degree* (gained at any University so approved of ; which includes study in mining and allied sciences) being accepted instead of two of the five years' practical experience otherwise imperative. The regulations for the Diploma in Mining and the B.Sc. degree in Mining of the University have been accepted by the Secretary of State for the Home Department as qualifying for the foregoing privilege.

#### COURSE IN METAL MINING.

Courses I A and II A have been specially drawn up to meet the requirements of students undergoing a training in metal mining, and those otherwise interested in the subject. In addition to these courses, metal-mining students studying for the Diploma must take such portion of Courses I., and II. as bear on their subject.

#### LABORATORY PRACTICE.

Laboratory practice is essential in the curriculum of the regular Mining Student, but advanced Laboratory practice is also designed for those who have already passed through a Mining course at other Schools.

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\* Courses I., I A, II., II A, and III.

The Laboratory Practice is made up as follows :

- (a) PRACTICAL MINERALOGY for first and second year students ; examination of minerals, and blow pipe analysis.
  - (b) COAL MINING LABORATORY for second year students ; analysis of coals, and other fuels. Determination of the constituents of mine air. Testing of safety lamps. Determination of fire-damp by the flame. Ventilation Tests. Efficiency of fans—manometrical and mechanical. Determination of coefficient of friction ; coefficient of leakage. The equivalent orifice. Mine timbering.
  - (c) ORE DRESSING PRACTICE for third year students. Construction of Machines. Treatment of gold ores. Panning ; sizing tests ; stamp milling. Treatment of ores of the base metals ; vanning. Determination of sieve scale. Treatment of ores in bulk.
- 

### COURSES OF STUDY.

The following curriculum is provisional, and hereafter may be altered or extended as experience of the wants and requirements of mining students and the mining public may determine.

These mining courses comprise an education in the principles and practice of coal mining, metal mining, quarrying, mine surveying, plan making, and mining jurisprudence ; and, in connexion therewith, the students attend lectures and laboratory classes in the sciences allied to mining.

#### *FIRST YEAR.*

- 1.—Mathematics, Course I.
- 2.—Physics, Course I., and Physical Laboratory.
- 3.—Geology, Course I.
- 4.—Elementary Mining and Mining Engineering, Course I. and Course I A†. Surveying, Course I. Mineralogy, Course I.
- 5.—Engineering, Course I.

*SECOND YEAR.*

- 1.—Mathematics, Course II.\*
- 2.—Chemistry, Course I A, and Chemical Laboratory.
- 3.—Geology, Course II.  
Applied Geology, Course III., A and C.
- 4.—Engineering.—Drawing, Course II.
- 5.—Mining, Course II., Course II A† and Surveying,  
Course II. Coal Mining Laboratory and Miner-  
alogy, Course II.

*THIRD YEAR.*

- 1.—Mining, Course III., and Surveying, Course III.  
Ore dressing laboratory.
  - 2.—Engineering Courses IX., XI., and XV., with  
Laboratory, and Steam Engineering practice  
in the power station.
  - 3.—‡Metallurgy and Metallurgical Laboratory.
  - 4.—Special Mining and Engineering Geology.
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Metallurgical Students will take Courses I. and III., and can omit Course II.

\* "Diploma" Students are not required to take this Course.

† This Course is intended for Students specialising in Metal Mining. It is not necessary that it should be taken by Students entered for the Diploma in Mining. Degree Students must take both Courses.

‡ Coal Mining Students take "General Course Lectures, for the first two terms only, and *Laboratory* three hours weekly, but may be excused the latter (see third year Time Table).

Metal Mining Students take "General Course" Lectures for three terms and *Laboratory* nine hours weekly.

## LECTURE, LABORATORY AND SURVEYING COURSES.

### First Year's Course.

#### GENERAL MINING, COURSE I.

Two lectures a week, on Tuesdays and Fridays, at 3 o'clock during the Session.

**FEE : £4 4s. od.**

This course of about eighty lectures will be given during the session on General Mining, which will follow the lines of the subjoined syllabuses (I. and I A).

#### Syllabus I.

- |                                    |   |
|------------------------------------|---|
| Common to<br>Course I. and<br>I.A. | <ul style="list-style-type: none"> <li>OBJECTS AND CONDITIONS OF MINING.—Scope of the subject. Qualifications of a Mining Engineer.</li> <li>PROSPECTING AND BORING.—Outcrops, surface indications, coal and other mineral deposits, costeaning, shoading, position of boreholes, various methods of boring, cost of boring. Surveyor of boreholes.</li> <li>BREAKING GROUND.—Sinking shafts, position, number, shape, and size of shafts, manner of sinking and securing shafts, sinking through running ground, various costs in connection with sinking.</li> <li>UNDERGROUND DEVELOPMENT AND SYSTEMS OF WORKING.—Laying out a colliery underground. Preliminary operations in coal mines. Various systems of working coal seams. Coal cutting. Blasting. Timbering in colliery workings.</li> <li>TRANSPORT.—Underground and surface transport, haulage by hand, by horse, mechanical haulage, main rope, main and tail rope, and endless rope systems of haulage self-acting inclines, locomotive and electric haulage, ropes, surface transport, aerial ropeways, horse, steam and electric tramways.</li> <li>WINDING.—Kibbles, skips, cages, ropes, pit-head frames, pulleys, guides, keps, onsetting and banking, surface arrangements. Winding engines, drums.</li> <li>DRAINAGE.—Water levels, dams, underground pumping and pumps, pumping by ropes, steam, com-</li> </ul> |
|------------------------------------|---|

pressed air, electric and hydraulic pumps, surface pumps and pumping.

**VENTILATING.**—The atmosphere and mine gases. Natural ventilation. Furnaces, fans, and other ventilators, underground air-currents. Splitting and measuring air-currents.

**LIGHTING OF MINES.**—Safety Lamps.

**SCREENING OF COALS—PREPARATION FOR THE MARKET.**  
—Tipplers, types of screens, washing, coking.

#### METAL MINING COURSE.

##### I A.

The lectures of the first term of Course I. are common to both Courses. During the Spring and Summer Terms there will be a lecture at 2 o'clock on Tuesdays.

FEE: £2 2s. od.

##### Syllabus I A.

##### *The working of Ore Deposits.*

Occurrence of minerals, veins and ore deposits of various kinds, rock-forming minerals, blasting and rock drilling, mining tools, cross-cutting and driving of levels, stoping, costs, timbering and supporting of excavations, various systems of working mineral veins and ore deposits, quarrying of slate and building stones.

##### Practical Mineralogy.\*

A Laboratory Course for first and second year students.  
Hours by arrangement.

FEE: £3 3s. per Session.

#### MINE AND LAND SURVEYING.

##### I.

*Mine and Land Surveying and Plotting extending over three years.*—Half of each of the first two years' Courses will be devoted to surveying in the field or underground, or to plotting surveys in the drawing office.

FEE: £3 3s.

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\* Students are required to provide themselves with a mineralogical set.

This course is intended for students in Mining, Agriculture, Civil and Electrical Engineering. Besides the practical work in the field, underground, and in the drawing office, there will be lectures on the subject.

N.B.—Students are expected to be able to work with logarithms and to be conversant with elementary plane trigonometry.

### Syllabus I.

**THE OBJECT OF SURVEYING.**—Qualifications of surveyor.

**DIRECT MEASUREMENT OF DISTANCES.**—Chains, Steel Tapes, measurement on slopes, correction for slope. Underground measurements. Simple chain surveying ; offsets ; ranging lines. Methods of booking and plotting.

**THE MINER'S DIAL.**—Construction ; limitations. Instrumental errors. Secular, annual, and diurnal variations of magnetic meridian ; magnetic storms. Determination of magnetic declination. Loose needle dialling ; method of booking. Loose needle dialling in presence of iron. Fast needle dialling ; principle of the vernier ; the three-stand method ; the one-stand method ; method of booking. The dial as a rough theodolite.

**PLOTTING DIAL SURVEYS.**—By protractor ; by chords.

**THE GERMAN DIAL AND MODIFICATIONS.**

**CALCULATION OF AREAS.**—“ Give and take ” lines ; ruled paper method ; reduction to triangles ; use of planimeter. Assessing royalty dues.

**CALCULATION OF VOLUMES.**—Contour lines. Contents of reservoirs, heaps, embankments, etc.

**LEVELLING.**—Forms of levelling instruments ; their construction. Levelling staffs. Simple levelling ; compound levelling ; flying levels ; underground levelling. The plotting of section levels. Levelling steep drifts. Measurement of depths of shafts.

**THEODOLITE.**—Construction. Specifications for mine surveying purposes. Simple traversing, underground and surface.

**MINE PLANS.**—Their object. Coal Mines and Metalliferous Mines' Regulation Acts regarding plans. Construction of plans ; scales ; printing ; colouring, etc. The copying of plans.

**GRADIENTS.**—Rules regarding ; Problems relating to.

## Second Year's Course.

## GENERAL MINING.

*II.*

One lecture a week, on Tuesdays, at 11 a.m.

FEE : Lectures £2 2s.

A course of about thirty lectures will be given during the Session, which will follow the subjoined Syllabus.

**COLLIERY AND MINE MANAGEMENT.**—Pumping, re-opening of drowned-out mines; special instances described. Colliery explosions. Mode of procedure in work of rescue and reclamation; special instances treated. Steam, compressed air, water, and electricity as sources of power in Mining. Systems of employment and payment of men. Relations of Capital and Labour. Examination and Valuation of Mines and Mineral Properties. Mine Reports. Commercial considerations.

**MINING JURISPRUDENCE.**—Mining Laws and Regulations. Acts of Parliament relating to Mines. Ownership of Minerals, Royalties, Concessions, Leases, Dues, Foreign Mining Laws.

*II A.*

One lecture a week, on Tuesdays, at 12.

FEE : Lectures, £2 2s.

A course of about thirty lectures will be given during the Session, which will follow the accompanying syllabus.

Hydraulicing. Dredging. Means of Ascent and Descent of Mines. Winding. Pumping. Air Compressors. Electricity applied to Metal Mining. Sampling. Estimation of Reserves. Management of Metal Mines. Laying out of Surface Erections and Plant. Principles of Employment. Metalliferous Mines Regulation Act.

*COAL MINING LABORATORY.*

Three hours a week throughout the Session, Tuesdays, 2 to 5.

FEE: £7 17s. 6d.

*PRACTICAL MINERALOGY.*

Hours by arrangement. FEE: £3 3s. od.

## MINE AND LAND SURVEYING.

## II.

Thursdays, 2.30 to 4.30, throughout the Session.

FEE : £3 3s.

## Syllabus.

CO-ORDINATES. Method of calculating ; their value and accuracy.

THE THEODOLITE.—Methods of measuring angles ; transit method ; repetition ; reiteration ; deflection angles. Traversing underground and surface ; methods of booking.

TRIANGULATION.—Choice of base-lines and stations. Measurement of base-lines ; extension of short bases. The best shape of triangles. Measurement of angles. Fixing subsidiary points ; the "three-point problem." Solution of triangles ; calculation of co-ordinates ; mode of plotting. Filling in details ; plane table ; prismatic compass.

## LEVELLING—

(a) GEOMETRICAL LEVELLING.—The dumpy ; the Y-level ; contouring by level. Sounding.

(b) TRIGONOMETRICAL LEVELLING.—By theodolite. By tacheometer ; subtense method of measuring distances ; the stadia ; Reichenbach's formula ; booking tacheometer readings ; reduction of tacheometer readings ; plotting ; contouring by tacheometer ; method of making complete survey by tacheometer.

(c) PHYSICAL LEVELLING.—The hypsometer ; the mountain barometer ; the aneroid.

CARRYING BEARING UNDERGROUND —In the case of adits. In the case of two vertical shafts. In the case of one vertical shaft ; Weisbach's method ; Gauss' method. Best shape of triangles. Replacing plumb-lines by pins ; clamping plumb-lines ; Schmidt's apparatus. Optical plumbing. In case of inclined shafts. Corrections in use of side-telescope and top-telescope.

ADJUSTMENTS OF THEODOLITE.—Temporary adjustments. Permanent adjustments for line of collimation ; for horizontal axis ; for index error ; for spirit levels. Makers' adjustments ; testing centering, graduations, centricity of plates, etc.

ADJUSTMENT OF DUMPY AND Y-LEVELS.—Temporary. Permanent; collimation, top level adjustments.

DETERMINATION OF LATITUDE AND LONGITUDE.—By sun; by stars. "Dead reckoning."

DETERMINATION OF AZIMUTH.—From Ordnance map, by sun, by pole-star, method of equal altitudes, "Alioth" method.

SETTING-OUT.—Maintaining gradient and alignment under ground. Underground curves. Railway and drainage tunnels. Ranging railway curves. Miscellaneous metal mining problems.

BOREHOLE SURVEYING.—Necessity for borehole surveying, effects of deviation of the bore-hole on the dip, strike and depth. The stratumeter, Nolten's, MacGeorge's, and Marriott's methods. Related problems.

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### Third Year's Course.

#### GENERAL MINING. III.

A considerable part of the time of the third year's Mining Course will be given to practical work in the laboratory, but there will be a series of lectures on Foreign Coal and Metal Mining, also instruction in the theoretical principles involved in the dressing of gold, silver, copper, lead and other ores, and of fuels. These lectures and the instruction will be in accordance with the following Syllabus :—

##### *DRESSING OF MINERALS AND FUELS.*

###### OBJECTS AND PRINCIPLES.

HAND SORTING.—Spalling, Picking, Picking Belts, Tables.

CRUSHING.—Rock-breakers, Rolls, Stamps, Disintegrators, Coal-breakers.

SIZING.—Sieving, Screens of various types, Hydraulic Sizing.

HYDRAULIC DRESSING.—Principals, Jigs, Coal-washers, Buddles, Blankets, Vanners.

PNEUMATIC DRESSING.

MAGNETIC SEPARATION.

APPLICATIONS OF METHODS TO SPECIAL CASES.—Coal Washing. Cleaning Iron Ores. Dressing of Lead, Copper, Zinc Ores. Tin Stamping. Gold Milling. Concentrating Silver Ores. Gem Washing. The Designing and Erection of Mineral Dressing Plant.

*FOREIGN COAL AND METAL MINING.*

COAL AND MINERAL DEPOSITS.—Methods of Classification. Various classes of Deposits, with illustrative typical examples of each. Chief coal and ore deposits of the world. Their mode of occurrence, distribution and importance.

WORKING OF COAL AND ORE DEPOSITS.—Special methods adopted in different parts of the world to meet special requirements. Brown coal, bituminous coal, the anthracites of America and elsewhere. Foreign metal mines.

*Lecture Days.*—Mondays, 10 to 11.

FEE : £3 3s.

*Laboratory.*—Monday, 2 to 5 ; Friday, 10 to 5.

FEE : £12 12s.

*PRACTICAL SURVEYING.*

*III.*

During the third year there will be a Course of Practical Surveying in the Field and Underground.

**Syllabus.**

Practical work in use of instruments underground, and at the surface, and computation of results. Construction and adjustment of instruments.

FEE : £3 3s.

As part of the Final Examination in Surveying. Students will be required to produce at the end of their second Session :

- I. A plan of an underground traverse, with notes.
- II. A sectional levelling made in a mine, with notes.
- III. A surface survey, with notes.

(c) *Visits of Inspection to Mines.*—On Saturdays there will be, whenever possible, visits to the coal mines in the

neighbourhood, when much that has been treated by the Lecturer during the week will be emphasized by the practical demonstration then witnessed. These visits will be common to the students attending all or any of the mining courses.

The first year course constitutes in itself a complete outline mining course, and can be taken as such by occasional students, but those students who have entered for the Mining Diploma or the degree of B.Sc. in Mining will have to proceed in the one case to Course II. and in the other to Courses II. and III.

#### *BOOKS RECOMMENDED FOR GENERAL READING.*

##### **TEXT BOOKS ON COAL MINING :—**

*A Text Book on Coal Mining* (H. W. HUGHES).

*Colliery Working and Management* (H. F. BULMAN and R. A. S. REDMAYNE).

*Gases met with in Coal Mines, and General Principles of Ventilation* (J. J. ATKINSON).

Or instead of the latter—*Coal, Mine-Gases, and Ventilation* (J. W. THOMAS).

##### **LABORATORY —**

*The Investigation of Mine Air* (C. LE NEVE FOSTER and J. S. HALDANE).

##### **MINE SURVEYING :—**

*A Treatise on Mine Surveying* (BENNETT H. BROUH).

##### **METAL MINING :—**

*Ore and Stone Mining* (C. LE NEVE FOSTER).

*Ore Dressing* (RICHARDS).

*Elements of Mineralogy* (F. RUTLEY).

##### **ELECTRICAL :—**

*Electricity as Applied to Mining* (LUPTON, PARR & PERKIN).

The following are recommended for consultation :—

*The Transactions of the North of England Institute of Mining Mechanical Engineers.*

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|-----|-----|---|
| " " | " " | <i>Federated Institute of Mining Engineers.</i> |
| " " | " " | <i>British Society of Mining Students.</i>      |
| " " | " " | <i>Institute of Mining and Metallurgy.</i>      |
| " " | " " | <i>American Institute of Mining Engineers.</i>  |
| " " | " " | <i>Dana's Mineralogy.</i>                       |
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*Mine Owners or Managers having vacancies are requested to apply to the Professor.*

TIME TABLE OF FIRST YEAR COURSE FOR DEGREE IN MINING.

SUBJECTS.	CLASS HOURS.				
	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
MATHEMATICS I. ...	12.30	11.30	...	11.30	12.30
PHYSICS I.—					...
Lectures ...	... ... ...	11.30 3.0—5.0	... ... ...	11.30 ... ...	11.30 ... ...
GEOLOGY I. ...	...	...	9.30—11.30	...	9.30—11.30
MINING I.—					
Lecture I. ...	...	...	3.0	...	3.0
Lecture I. A. ...	...	*2.0	...	...	...
Surveying and Planning	...	...	2.30—4.30	...	2.0—3.0
Practical Mineralogy ...			<i>Hours to be arranged.</i>		
ENGINEERING I. —					
Lecture ...	...	4.0	...	4.0	...

\* Spring and Summer Terms.

COMPOSITION FEE: £30.

TIME TABLE OF SECOND YEAR COURSE FOR DEGREE IN MINING.

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SUBJECTS.	CLASS HOURS.				
	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
MATHEMATICS ...	... 10.30	... 10.30	... 10.30	... 10.30	... 10.30
CHEMISTRY—					
*Lecture I. A.	...	9.30	9.30	9.30	2.0—5.0
Laboratory ...	... 2.0—5.0	...	...	...	...
GEOLOGY—					
Lecture II. ...	...	...	...	...	9.30
Laboratory ...	... 11.30	...	11.30	...	11.30
ENGINEERING—					
Drawing Course II. ...	...	...	2.0—5.0	...	...
MINING—					
Lecture II. ...	...	...	...	...	...
Lecture II. A. ...	...	11.0 12.0	...	...	...
Surveying and Planning ...	...	...	...	2.30—4.30	...
Laboratory ...	... 2.0—5.0	...	...	Hours to be arranged.	
Practical Mineralogy ...	...	...	...		

(Occasional visits to mines in the neighbourhood, or out-door survey work).

\* Winter and Spring Terms

COMPOSITION FEE: £3/-

TIME TABLE OF THIRD YEAR COURSE FOR DEGREE IN MINING.

SUBJECTS,	CLASS HOURS.				
	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
<b>MINING III.—</b>					
Lecture	... 10.0 2.0—5.0 ...	... 12.0 ...	... 12.0 ...	... 12.0 ...	... 10.0—5.0 ...
Laboratory	... 10.0 ...	... 11.0—1.0 ...	... 11.0—1.0 ...	... 11.0—1.0 ...	... 10.0—5.0 ...
Surveying	... ...	...	...	...	...
<b>ENGINEERING—</b>					
Course IX.	... 11.0 ...	... 12.0 ...	... 12.0 ...	... 12.0 ...	... 10.0 ...
Course XIII.	... ...	... ...	... ...	... ...	... ...
*Exercises to Course IX.	... ...	... ...	... ...	... ...	... ...
Electrical Laboratory and Steam Engineering practice in power station	... ...	... 2.0—5.0 ...	... 2.0—5.0 ...	... 2.0—5.0 ...	... ...
<b>METALLURGY—</b>					
Lecture	... ...	... To be arranged.	... ...	11.0 ...	... ...
Laboratory	... ...	... ...	... ...	...	...
<b>GEOLoGY (Special Mining and Engineering Geology)</b>					
	... ...	... To be arranged.	... ...	...	...

\* See footnote page 200 for nature of Metallurgy Course and for further particulars. Degree Students specialising in Coal Mining are not required to take the Laboratory Course in Metallurgy, but must take the Exercises in Course IX, in Engineering. Degree Students specialising in Metal Mining are required to take the Laboratory Course in Metallurgy, but are excused the Exercises to Course IX. in Engineering.

COMPOSITION FEE : £50.

## BIOLOGY AND CHEMISTRY OF FERMENTATION.

*Professor : ADRIAN J. BROWN, M.Sc. ; F.I.C.*

*Lecturer : THOMAS H. POPE, B.Sc. ; F.I.C.*

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### INTRODUCTION.

This Department is intended to provide instruction and encourage research in the Biology and Chemistry of Fermentation, and is associated with the School of Brewing which has been founded to provide scientific and technical instruction in the principles of brewing and the fermentation industries generally.

The courses of instruction provided are :—

1. A Degree Course in the Biology and Chemistry of Fermentation.
  2. A Diploma Course in the Technology of Brewing.
  3. Certificate Courses for Brewers and for Maltsters.
  4. Shorter Courses of study in the Technology of the fermentation industries.
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### DEGREE COURSE.

The Degree Course is recommended to those students who contemplate taking up Biological work in connection with such subjects as the Fermentation Industries, Agriculture, Bacteriology in connection with water supply and the treatment of sewage, &c. It is also suitable for students who are candidates for the associateship of the Institute of Chemistry in the branch of Biological Chemistry.

Candidates for the degree of B.Sc. are required to be matriculated in the Faculty of Science, and during their first year to attend the courses laid down for students in Pure Science, viz. :—Chemistry, Elementary Biology, and either Pure Mathematics or Physics, and pass the

Intermediate Science Examination. In their second and third years they must take the Biology and Chemistry of Fermentation as a principal subject and Chemistry as a double subsidiary subject.

The courses are set out in detail in the following table :

*SECOND YEAR COURSES.*

- (i.) Vegetable Physiology and Morphology, with special reference to the Fungi (Botany, Course II.), with Laboratory.
- (ii.) Advanced Organic Chemistry, together with General and Physical Chemistry (Course II.), with Laboratory.

*THIRD YEAR COURSES.*

- (i.) Biology and Chemistry of Fermentation.
  - (a) Lectures and practical work, comprising a study of the Micro-Organisms of Fermentation—their culture, classification, morphology, physiology, and chemical actions.
  - (b) Lectures and practical work, comprising a study of the Carbo-Hydrates and the special methods employed in their examination; and of the Proteins and their products of decomposition.
  - (c) Lectures and practical work, comprising a study of Enzymes and their actions.

FEE : £12 12s.

- (ii.) Advanced Organic Chemistry, together with General and Physical Chemistry (Course III.), with Laboratory.

*DIPLOMA COURSES.*

The Diploma Courses extend over a period of three years. In the first year Elementary Inorganic Chemistry, Physics, and Botany are taken, with a modern language as an optional subject; but this course of study is subject to alteration according to the student's previous education.

The second year's course includes advanced Chemistry, both inorganic and organic, with an extended course of laboratory work, practical elementary Bacteriology, Engineering, and a short course of lectures on Geology.

The third year's course consists of lectures on the Technology of Brewing, and practical work in the Brewing Laboratory.

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#### *SPECIAL DIPLOMA FOR GRADUATES.*

Graduates who have taken the degree of B.Sc. with the Biology and Chemistry of Fermentation as a principal subject may obtain a Special Diploma in the Technology of Brewing after a further course of study of one year in the Department.

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#### *CERTIFICATE COURSES AND SHORTER COURSES.*

Certificate Courses and shorter courses of instruction in the technology of brewing and the fermentation industries generally are also arranged.

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*For full information regarding the Diploma Course in Brewing and the shorter courses of study the student is referred to the special syllabus of the School of Brewing.*

The Laboratory of the Department is open from 9.30 a.m. to 5.30 p.m. for special study and research work, under the direction of Professor Adrian Brown, to whom applications should be made.

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# FACULTY OF ARTS.

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## Syllabuses of Courses.

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### LATIN.

*Professor* : E. A. SONNENSCHEIN, M.A. ; D. Litt. (Oxon.).

*Lecturer* : C. D. CHAMBERS, M.A. (Oxon.).

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The *Preliminary Course* in Latin is designed to secure a knowledge of the language (including Grammar and Composition), such as is necessary for students entering on University Courses in this subject.

The *University Courses* in Latin for the ordinary B.A. degree are designed to embrace a study of representative masterpieces of Latin literature, which will be treated as literary wholes and from a literary point of view. These Courses bring the student into contact with typical specimens of Latin literature in the fields of epic, lyric, and didactic poetry, and of historical and philosophical prose, and thus provide a basis for the historical and comparative study of literature. At the same time the grammatical and philological study of Latin and the practice of composition are maintained and developed, mainly in connexion with the prose works selected under each course.

Course IV. is reserved as an advanced and specifically linguistic course, in preparation for the M.A. Examination. The subjects read in this course are varied from year to year in accordance with the needs of students.

**VACATION READING.**—Students will find it of great advantage to them to read some at least of the books recommended for Vacation Reading in preparation for Courses I.—III. (see page 426).

## PRELIMINARY COURSE.

Tuesdays, Thursdays, and Fridays, at 4.30.

In this Course students are prepared for the Matriculation Examination of the University of Birmingham.

SUBJECTS : *Pro Patria*, a Latin story, by Professor Sonnenschein, together with *Cæsar's Invasion of Britain* (or some other book suitable for the Matriculation Examination). Professor Sonnenschein's *Latin Accidence* (Parallel Grammar Series).

FEE : £3 13s. 6d.

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## UNIVERSITY COURSES.

*COURSE I.—THE EPIC (WITH SOME LIVY).*

Mondays and Thursdays, at 2.30.

SUBJECTS : (1) Vergil, *Aeneid* IV. and VI., with a literary study of the Aeneid as a whole,  
 (2) Selections from Livy.

## BOOKS RECOMMENDED :

Vergil : *Aen.* I.—VI., edited by Page (Macmillan's Classical Series).

Translation of the whole *Aeneid*, in verse, by Rhoades (Longman); or of *Aeneid* I.—VI. in verse, by Bowen (Murray).

*Livy Lessons*, by J. Hunter Smith (Swan Sonnen-schein and Co.).

*Latin Literature*, by Mackail (Murray).

Professor Sonnenschein's *Latin Syntax* (Parallel Grammar Series).

FEE : £2 12s. 6d.

*COURSE II.—LYRIC POETRY (WITH SOME TACITUS).*

Tuesdays and Fridays, at 2.30.

Subjects—(1) Select lyrics of Horace and Catullus.  
 (2) Tacitus, *Agricola*.

## BOOKS RECOMMENDED :

Horace : *Odes*, edited by Page (Macmillan's Classical Series) or by Gow (Pitt Press).

Students taking Latin as a principal subject for the B.A. are recommended to get the whole works of Horace, edited in one volume, by Page, Palmer and Wilkins (Macmillan).

Translations : verse, by De Vere (Bell), or Select Odes in W. Scott's Canterbury Poets.

Catullus : Select Poems, edited by Simpson (Macmillan's Classical Series).

Translation : verse, by Martin (Blackwood).

Tacitus : *Agricola*, edited by Pearce (Bell and Sons), or by Furneaux (Clarendon Press).

Translation by Church and Brodribb (Macmillan).

FEE : —£2 12s. 6d.

*COURSE III.—DIDACTIC VERSE AND PROSE.*

Tuesdays and Thursdays, at 3.30.

SUBJECTS : (1) Horace, *Select Satires and Epistles*, including the *Ars Poetica*.  
 (2) Juvenal, *Satires* III. and X.  
 (3) Selections from Seneca.

## BOOKS RECOMMENDED :

Horace, complete works, by Page, Palmer and Wilkins (see Course II.), or *Epistles* alone by Wilkins (Macmillan's Classical Series).

Translation of the *Epistles* in verse, by Conington (Bell).

Juvenal, edited by Strong (Clarendon Press).

FEE : —£2 12s. 6d.

*COURSE IV.—ADVANCED COURSE ON LANGUAGE.*

Mondays at 4.30, and Wednesdays at 2.30, or by arrangement.

The subjects of the Course will be chosen with a view to the M.A. Examination, and may include select plays of Plautus, with a study of Old Latin metres and grammar.

FEE :—£2 12s. 6d.

*COURSE V.—ANCIENT HISTORY.*

For course of lectures on this subject (by Mr. Caspari) see History, p 367.

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**Composition Sets.**

Sets will be formed for the practice of Latin Composition of various stages of difficulty, and will meet at the following hours :—Set 1 (*a*), Fridays, at 2.30; (*b*) Wednesdays, at 3.30; Set 2, Thursday, at 2.30; Set 3, Fridays, at 3.30. More advanced students will be taken separately, at hours to be fixed at the commencement of the session.

**BOOK RECOMMENDED :**

For Set 1: *Third Latin Reader and Writer*, by Dix (Swan Sonnenschein & Co.).

FEE: £1 11s. 6d.

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***REQUIREMENTS FOR DEGREES.***

*Intermediate Arts Examination:* Course I.

*Ordinary B.A. Examination:*

- (i.) When Latin is a principal subject: Courses II. and III. in successive years.
- (ii.) When Latin is a subsidiary subject: either Course II. or Course III.

*M.A. Examination :*

All candidates for the M.A. degree in Latin will be examined in the four following subjects :—

- (i.) Composition.
- (ii.) Unseen translation.
- (iii.) Selected authors (see below).
- (iv.) Latin literature and philology.

Candidates who offer Latin alone will be required to show a special knowledge of *four* Latin authors, to be selected by themselves and approved by the University. Candidates who offer Latin together with another subject will be required to show a special knowledge of only *two* Latin authors.

The subject of the dissertation required for the M.A. degree should be selected in consultation with the Professor as early in the session as possible.

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## SCHOOL OF CLASSICS.

For regulations relating to the new School of Classics, see page 171. For the first examination in the School (to be held in June, 1908) the following courses are recommended : Course II. and Course III.

Special arrangements will be made for composition. Students are also recommended to join the Reading Circle of the Birmingham and Midlands Branch of the Classical Association.

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## TIME TABLE.

LATIN.	Mon.	Tues.	Wed.	Thurs.	Fri.
Preliminary Course	...	4.30	...	4.30	4.30
University Courses—					
Course I.	...	2.30	...	3.30*	2.30
Course II.	...	...	2.30	...	2.30*
Course III.	...	...	3.30	...	3.30*
Course IV.	...	4.30†	...	2.30†	...

\* Composition.

†Or by arrangement.

## GREEK.

*Professor : E. A. SONNENSCHEIN, M.A. ; D.Litt. (Oxon.).  
Lecturer : M. O. B. CASPARI, M.A. (Oxon.)*

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The *Preliminary Course* in Greek is designed to secure a knowledge of the language (including Grammar and Composition) such as is necessary for students entering on University Courses in this subject.

The *University Courses* in Greek for the ordinary B.A. Degree are designed to embrace a study of representative masterpieces of Greek literature, which will be treated from a literary point of view and with reference throughout to their background of Greek life and art. In the Advanced Course (Course IV.) there is a fuller treatment of the historical and archaeological questions arising in connexion with the subject matter of the books read.

During the Winter and Spring Terms a course of popular lectures on some literary or archæological subject is usually delivered.

The course of lectures on *New Testament Greek* (Course V.) is designed partly for theological students preparing for the Intermediate Arts Examination, partly for students who have no examination in view.

Any students desiring to study Greek outside the regular University Courses should apply to the Professor on or before the first day of the session.

VACATION READING.—Students are strongly recommended to prepare themselves for the several Degree Courses by reading some at least of the books prescribed for study during the vacations. (See p. 426.)

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## PRELIMINARY COURSE.

Mondays, Thursdays, and Fridays, at 2.30.\*

In this Course students are prepared for the Matriculation Examination of the University of Birmingham.

SUBJECTS: *The Greek War of Independence*, by Chambers. Professor Sonnenschein's Greek Accidence (Parallel Grammar Series).

FEE:—£3 13s. 6d.

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## UNIVERSITY COURSES.

*COURSE I.—HISTORICAL AND ORATORICAL PROSE.*

Two hours weekly, by arrangement.

SUBJECTS—(1) Thucydides, IV., chapters 1—41.  
(2) Demosthenes, *Third Philippic*.

BOOKS RECOMMENDED:

Thucydides, IV., edited by Graves (Macmillan).  
Demosthenes, *On the Peace*, *Second Philippic*, *Chersonese*, and *Third Philippic*, edited by Sandys (Macmillan).  
Professor Sonnenschein's *Greek Syntax* (Parallel Grammar Series).

FEE:—£2 12s. 6d.

*COURSE II.—THE DRAMA.*

Two hours weekly, by arrangement.

SUBJECTS: (1) Æschylus, *Prometheus*, with a literary study of the Greek Drama.  
(2) Selections from *Florilegium Tironis Græcum*.

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\* These hours and days are subject to modification by arrangement.

## BOOKS RECOMMENDED :

Æschylus, *Prometheus*, edited by Haines (Swan Sonnenschein and Co.)

Æschylus. The Seven Plays, translated in verse by Campbell (K. Paul); or *The House of Atreus*, by Morshead (K. Paul), containing the Oresteia.

*Florilegium Tironis Græcum*, by Burrows and Walters (Macmillan).

Verrall, *The Student's Manual of Greek Tragedy* (Swan Sonnenschein and Co.)

FEE :—£2 12s. 6d.

*COURSE III.—THE EPIC, WITH PHILOSOPHICAL PROSE AND LITERARY CRITICISM.*

Two hours weekly, by arrangement.

SUBJECTS : (1) Homer, *Iliad*, XXIV., with a literary study of the Iliad as a whole.  
 (2) Plato, *Apology* and *Ion*.  
 (3) Aristophanes, *Frogs*.

NOTE.—Aristotle's *Poetics* is read in the English Literature Course for the Second Year (Course II.).

## BOOKS RECOMMENDED :

Homer, *Iliad*, XIII.—XXIV., edited by Monro (Clarendon Press). Translation of the whole Iliad in prose by Leaf, Lang, and Myers (Macmillan).

Plato, *Apology*, edited by Adam (Pitt Press); *Ion*, text only.

Aristophanes, *Frogs*, edited by Merry (Clarendon Press).

Murray's *Euripides* (translation of *Hippolytus* and *Bacchae*, and of Aristophanes' *Frogs*).

FEE :—£2 12s. 6d.

*COURSE IV.—ADVANCED COURSE.*

By arrangement.

The subjects of study in this course will be chosen with a view to the M.A. Examination.

SUGGESTED SUBJECTS: (1) Pindar, *Pythian Odes*, with Pausanias, Book X. (2) Aristophanes, Select Plays. (3) Demosthenes, *Private Orations*.

BOOKS RECOMMENDED:

Pindar, *Olympian and Pythian Odes*, edited by Gildersleeve (Macmillan).

Translations: verse, by Morice (K. Paul); prose, by Myers (Macmillan).

Aristophanes, text of complete works by Hall and Geldart (Clarendon Press).

Translation of select comedies in verse by J. H. Frere (Morley's Universal Library), or by B. B. Rogers (Bell).

Demosthenes, Select Private Orations, by Paley and Sandys (Pitt Press).

FEE: £2 12s. 6d.

*COURSE V.—HELLENISTIC GREEK (NEW TESTAMENT).*

Two hours weekly, by arrangement.

In this course Hellenistic Greek will be studied in connexion with one or more selected books of the New Testament.

Students taking Hellenistic Greek for the Intermediate Arts Examination will be required to attend in addition one of the Composition Sets which meet on Fridays at 3.30.

FEE: £2 12s. 6d.

*COURSE VI.—ANCIENT HISTORY.*

See History Syllabus, p. 367.

### Composition Sets.

Sets will be formed for the practice of Greek Composition of various stages of difficulty, and will meet on Fridays, at 3.30 and 2.30 (or at hours to be arranged). More advanced students will be taken separately at hours to be fixed at the commencement of the session.

FEE :—£1 11s. 6d.

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### *REQUIREMENTS FOR DEGREES.*

*Intermediate Arts Examination : Course I. or Course V.*

*Ordinary B.A. Examination :*

- (i.) When Greek is a principal subject : Courses II. and III. in successive years.
- (ii.) When Greek is a subsidiary subject : either Course II. or Course III. or a second year's course of Hellenistic Greek.

*M.A. Examination :*

All candidates for the M.A. Degree in Greek will be examined in the four following subjects :—

- (i.) Composition.
- (ii.) Unseen Translation.
- (iii.) Selected authors (see below).
- (iv.) Literature and Philology.

Candidates who offer Greek alone will be required to show a special knowledge of *four* Greek authors to be selected by themselves and approved by the University. Candidates who offer Greek together with another subject will be required to show a special knowledge of only *two* Greek authors.

The subject of the dissertation required for the M.A. degree should be selected in consultation with the Professor as early in the session as possible.

## SCHOOL OF CLASSICS.

For regulations relating to the new School of Classics, see page 171. For the first Examination in the School (to be held in June, 1908) the following courses are recommended: Course II. and Course III.

Special arrangements will be made for composition. Students are also recommended to join the Reading Circle of the Birmingham and Midlands Branch of the Classical Association.

## TIME TABLE.

*The hours put down in this Time Table are suggested times only, and are subject to alteration by arrangement at the beginning of the session.*

GREEK.	Mon.	Tues.	Wed.	Thurs.	Fri.
Preliminary Course	... 2.30	...	...	2.30	2.30
<b>University Courses—</b>					
Course I.	... 3.30	...	...	3.30	3.30
Course II.	... 10.30	...	...	10.30	...
Course III.	... 12.30	...	...	...	4.30
Course IV.	... 10.30	...	...	10.30	11.30
Course V.	... 12.30	...	...	...	...
Course VI.	... 4.30	12.30	...	4.30	...

## ENGLISH LANGUAGE AND LITERATURE.

*Professor* : J. CHURTON COLLINS, M.A.; M.A. (Oxon.),  
 D. Litt. (Dunelm.)  
*Lecturer* : M. MACMILLAN, M.A. (Oxon.).

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### PRELIMINARY COURSE.

Mondays and Wednesdays, at 9.30.

FEE :—£2 12s. 6d.

Lectures will be given on Shakespeare: *As You Like It*, *Julius Cæsar*, *Henry V.* Milton: *L'Allegro*, *Il Penseroso*, *Comus*, *Samson Agonistes*, *Areopagitica*.

COMPOSITION.—Tuesdays, at 2.30 (Winter and Spring terms only). In this Class there will be a study of Prose Composition. Members of the class will be expected to write Essays on the subjects from time to time suggested.

FEE :—£1 1s.

[The Sessional Fee for the whole Preliminary Course including History (for which see History Syllabus) is £5 5s.]

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### UNIVERSITY COURSES.

#### *COURSE I.*

##### A. *English Literature.*

Mondays and Thursdays, at 10.30.

FEE :—£4 4s.

The general History of English Literature from the birth of Chaucer to the death of Marlowe, 1593, with the following texts :—

**Group I. (obligatory)—**

CHAUCER : *Prologue, The Knight's Tale, and The Nonne Prestes Tale.* LOWELL'S *Essay on Chaucer.* SIDNEY'S *Defence of Poetry.* SPENSER'S *Faerie Queene*, Bk. I. SACKVILLE and NORTON'S *Gorboduc.* MARLOWE'S *Dr. Faustus.* PALGRAVE'S *Golden Treasury*, Bk. I.

**Group II. (recommended)—**

MATTHEW ARNOLD'S *Lectures on Celtic Literature.* TEN BRINK'S *Early English Literature.* MORE'S *Utopia.* HOOKER'S *Ecclesiastical Polity*, Bk. I.

**B. English Language.**

Fridays, at 9.30.

A sketch of the History of the English Language.

*COURSE II.*

**A. Literature.**

Tuesdays, at 11.30 ; Wednesdays, at 9.30 ; Thursdays, at 9.30.

FEE : £4 4s.

The general History of English Literature from 1593 to 1745, with the following texts :—

**Group I. (obligatory)—**

SHAKESPEARE : *Hamlet, Macbeth, Tempest.* BACON'S *Essays on Truth, Death, Unity in Religion, Adversity, Of the True Greatness of Kingdoms and Estates, Travel, Goodness and Goodness of Nature, Atheism, Superstition, Studies.* MILTON : *Paradise Lost, Bks. I and II., Samson Agonistes Areopagitica.* DRYDEN : *Absalom and Achitophel, Part*

I., *Religio Laici* POPE : *Rape of the Lock*, Fourth Epistle of *Essay on Man*. ADDISON'S *Sir Roger de Coverley Papers*. JOHNSON: *London* and *Vanity of Human Wishes*. PALGRAVE'S *Golden Treasury*, Bk. II.

Group II. (recommended)—

BACON : *Advancement of Learning*, Bk. I., *Novum Organum*, Bk. I. (*Aphorisms xxxviii.—lxviii.* inclusive). SWIFT : *Battle of the Books* and *Tale of a Tub*.

*Literary Theory.*

Group I. (obligatory)—

ARISTOTLE'S *Poetics* in translation, omitting chapters XX., XXI., XXII., XXV. POPE'S *Essay on Criticism*.

Group II. (recommended)—

HORACE : *Ars Poetica* in translation. Dryden's *Essay of Dramatic Poesie*. JOHNSON : *Lives of Cowley, Dryden, Addison and Pope*.

B. *Language.*

Fridays, at 11.30, through the Winter and Spring Terms.

Selections from Layamon, Orm, and other Middle English Writers. (Part I. of Morris and Skeat's *Specimens of Early English* to be used as text-book.)

*COURSE III.*

A. *Literature.*

Mondays and Wednesdays at 11.30.

FEE : £4 4s.

General History of English Literature from 1745 to 1850, with the following texts :—

## Group I. (obligatory)—

COLLINS : Selected *Odes*. GRAY : *The Bard*, *Progress of Poetry*, *Ode to Adversity*, *Elegy*. GOLDSMITH'S *Traveller*. WORDSWORTH : Matthew Arnold's *Selections*. COLERIDGE : *Ancient Mariner*, *Christabel*. SHELLEY : *Adonais*, *Prometheus Unbound*. TENNYSON : *In Memoriam*, *Ulysses*, *Lucretius*, *Tithonus*. MATTHEW ARNOLD : *Sohrab and Rustum*, *Mycerinus*. PALGRAVE'S *Golden Treasury*, Bks. III. and IV.

*Literary Theory.*

## Group I. (obligatory)—

WORDSWORTH : *Preface to the Lyrical Ballads*, with the Supplementary Preface. COLERIDGE'S *Biographia Literaria*, chapters XIX.—XXII. inclusive. STE. BEUVE'S *Essay on What is a Classic?*

## Group II. (recommended)—

MATTHEW ARNOLD'S *Function of Criticism at the Present Time* and *Pagan and Mediæval Religious Sentiment*. STE. BEUVE'S *Essays on The Literary Tradition*, and Review of Taine's *History of English Literature* (A. J. BUTLER'S Select Essays of Ste. Beuve).

B. *English Language.*

Thursdays at 11.30.

Selections from Langland, Chaucer, and other Middle English Writers. (Part II. of Morris and Skeat's *Specimens of Early English* to be used as text-book.)

*COURSE IV.*

Mondays and Tuesdays, at 12.30, and Wednesdays, at 5.30.

Fee :—£3 13s. 6d.

Lectures are given on Sections A and B of the following syllabus, and upon such other portions of the syllabus as may be selected by candidates preparing for the M.A. degree.

A. History of English Literature from the origins to the age of Chaucer, including a study of the following texts :—

(i.) *English Literature* (obligatory)—

CHAUCER : *The House of Fame*, *The Pardoners Tale*, *Clerke of Oxenfords Tale*. LAMB'S *Specimens of Elizabethan Dramatists*. SPENSER'S *Faerie Queene*, book II. SHAKESPEARE : *Romeo and Juliet*, *King Lear*, *Antony and Cleopatra*. MILTON'S *Paradise Regained*. POPE : *Essay on Man*, and *Moral Essays*. SWIFT'S *Gulliver's Travels*. JOHNSON'S *Lives of Swift, Addison, Collins, and Gray*. TENNYSON'S *Taylls of the King*. MATTHEW ARNOLD'S *Merope*.

(ii.) *Literary Theory* (obligatory)—

LONGINUS on the Sublime, omitting Sections xix., xxxiv., xxxvi., xxxviii. LESSING'S *Laocoon*. DE QUINCEY'S *Essays on Style and Rhetoric*. MATTHEW ARNOLD'S *Lectures on Homeric Translation*, and *Essays on Gray, Byron, Wordsworth, Shelley, Keats, and Preface to Ward's Poets*.

The following texts are also recommended for study :—

SCHILLER'S *Letters on the Aesthetic Education*. CAMPBELL'S *Philosophy of Rhetoric*. STE. BEUVE'S *Selected Essays* not included in the previous lists (Camelot Series and A. J. Butler's *Select Essays*). DOWDEN'S *Shakespeare, his Mind and Art*.

(iii.) *Anglo-Saxon* (obligatory)—

Wednesdays at 5.30.

Rudiments of Anglo-Saxon, including a study of Sweet's *Anglo-Saxon Primer*, *Piers Ploughman*, Prologue and Passus I. and II.

B. Germanic Philology, with selected Anglo-Saxon and Middle English Texts, as read in Class.

C. Shakespeare.

D. English Literature studied in its relation either to Italian or French or German Literature.

E. Special study of some one period of Literature to be selected in consultation with the Professor.

VACATION READING.—The subjects for Vacation Reading in English are the texts recommended in connexion with the various courses, see p. 427.

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#### *REQUIREMENTS FOR DEGREES.*

*Intermediate Arts Examination : Course I.*

*B.A. Degree :*

Students who take English as a principal subject at the B.A. Degree Examination are required to attend Courses II. and III. in successive years. Students who take English as a subsidiary subject may select either Course II. or Course III.

*M.A. Degree : Course IV.*

Students who desire to take the M.A. Degree in English alone are required to pass an examination in sections A and B of Course IV., and in two other sections selected from sections C, D, E.

Students who select English as *one* of the subjects for the M.A. Degree are required to pass an examination in two of the above sections, of which A is compulsory.

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#### SCHOOL OF MODERN LANGUAGES.

Students who select English as a subsidiary subject are required to pass an examination in sections A, B, and C of the foregoing list, together with an English Essay.

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#### SUMMARY OF COURSES IN THE SCHOOL OF ENGLISH LITERATURE.

##### *FIRST YEAR.*

History of English Literature from A.D. 1350 to 1593† and 1593 to 1745, being the two courses at present

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† Students who have already attended this Course may, instead of repeating it, attend the Composition Class (1 hour). In any case this period, 1350-1593, will be included in the Final Examination.

prescribed for the Intermediate and the Second Year. Mondays and Thursdays at 10.30, Tuesdays, 11.30, Wednesdays, 9.30, Thursdays, at 9.30.

Sketch of the History of the English Language, Fridays, 9.30.

(*Extra*). Elementary Anglo-Saxon, 1 hour.

Middle English, Fridays, 11.30, 1 hour.

English History, 1 hour.

(Eight hours a week.)

#### *SECOND YEAR.*

History of English Literature from 1745 to 1850, Mondays and Wednesdays, at 11.30.

(*Extra*). History of English Literature from 1850 to 1900, 1 hour. Advanced Anglo-Saxon, with Professor Fiedler, 1 hour.

Middle English, 1 hour.

(*Extra*). Literary Theory, 1 hour.

English History, 1 hour.

English Composition, 1 hour.

(Eight hours.)

#### *THIRD YEAR.*

Influence of Latin Literature on English, 1 hour.

Influence of Greek Literature on English, 1 hour.

Influence of Modern Literatures on English, 1 hour.

Advanced Anglo-Saxon, 1 hour.

Middle English, 1 hour.

History of English Literature from Origins to Chaucer.

Literary Theory, certain text-books for particular study, 1 hour.

English History, 1 hour.

Philosophy, 1 hour.

(Nine hours.)

## SCHOOL OF ENGLISH LITERATURE.

For regulations relating to the new School of English Literature, see p. 173. For the first Examination in the School (to be held in June, 1908), the following courses are recommended : Course I., Course II., Course IV. (iii.), Course IIB.

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## TIME TABLE.

ENGLISH.	Mon.	Tues.	Wed.	Thurs.	Fri.
Preliminary	...	... 9.30	...	9.30	...
Composition	...	... 2.30†	...	...	...
Course I.	...	... 10.30	...	...	10.30 9.30
Course II.	...	... 11.30	11.30 9.30	9.30	11.30†
Course III.	...	... 11.30	...	11.30	11.30
Course IV.	...	... 12.30	12.30 5.30	...	...

† Winter and Spring Terms.

*Essay Class* (optional)—Mondays, 5.30

## FRENCH LANGUAGE AND LITERATURE.

*Professor* : CLOVIS BÉVENOT, M.A. ; M.A. (Oxon.).

*Lecturer* : PAUL DEMEY, L. ès-L.

*Assistant Lecturer* : E. L. BARBIER, B.A. (Wales).

### PRELIMINARY COURSE.

Mondays and Fridays at 3.30, and Thursdays at 2.30.

In this course students are prepared for the Matriculation Examination of the University of Birmingham.

Books : Francinet, by Bruno (Belin) ; with Siepmann's Parts I. and II.

FEE :—£3 13s. 6d.

### UNIVERSITY COURSES.

#### I.

The course is divided into Sections A and B, which meet as follows :—

(a) Mondays : Section A<sub>a</sub> at 3.30 ; Section A<sub>B</sub> at 4.30 ; Section B at 4.30. Grammar, Idioms, and Composition.

(b) Sections A<sub>a</sub> and A<sub>B</sub> separate on Thursdays, and B on Tuesdays, at 4.30 :

(i.) Reading, Translation, and Critical Appreciation of the following works :—

Rousseau—*Lettre à d'Alembert sur les spectacles*.

'Les cent meilleurs poèmes de la langue Française' (Gowans and Gray).

*Morceaux Choisis*, par Brunetière et Pellisson  
(the 18th Century Extracts).

(ii.) French Conversation, Dictation, and intelligent reading aloud.

(c) Sections Aα, Aβ, and B separate: Fridays, at 11.30. A rapid general survey of French Literature and Historical Grammar.

*Abrégé de l'histoire de la Littérature Française*, par Julien Boitel (Delagrave).

Historical French Grammar (Weekley's).

These lectures will be delivered partly in French, if found suitable.

#### BOOKS RECOMMENDED :

History and Literature of France, by Prof. V. Spiers (Rivington); Short History of French Literature, by Kastner and Atkins (Blackie and Son); Primer of French Literature, by Prof. Weekley (Blackie).

FEE :—£3 13s. 6d.

#### II.

The Lectures are given in French.

The Course is divided into parallel Sections A and B, which meet separately and simultaneously.

(a) Mondays at 9.30: French Literature of the 17th Century. (Special Period.)

(i.) The 17th Century with special preparation of :

*Corneille*, Nicomède.

*Racine*, Andromaque.

*Moliere*, Le Misanthrope.

(ii.) Summary of the 16th, 17th, and 18th Centuries.  
*Histoire de la Littérature Française*, par R. Doumic.

(b) Tuesdays at 9.30 : French Conversation, Papers, and Debates.

(c) Fridays at 9.30 : (i.) Advanced French Composition. (ii.) French Phonology.

Darmesteter-Sudre : *Phonétique*.

#### BOOKS RECOMMENDED :

*Short History of French Literature*, by Kastner and Atkins (Blackie and Son).

FEE :—£3 13s. 6d.

### III.

The Lectures are given in French.

(a) Mondays at 2.30 : (i.) Advanced French Composition and Essay Writing, and Survey of French Metre and Prose Style. (ii.) French Philology.

"A Book of French Prosody," by Professor Brandin and W. G. Hartog.

(b) Tuesdays at 10.30 : French Conversation, Papers and Debates.

(c) Fridays at 10.30 : French Literature generally, with special preparation of the period 1422—1594.

*Rabelais* : Chapitres Choisis.

*Montaigne* : Essais Choisis.

*V. Hugo* : Préface de Cromwell ; Hernani.

*Darmesteter* : Ecrivains du 16<sup>e</sup> Siècle ; La Vie des Mots.

*Histoire de la Littérature Française*, par Lanson.

FEE :—£3 13s. 6d

## IV.

The lectures are given in French.

(a) Mondays at 2.30: (i.) Advanced Composition and Essay Writing; French Metre and Style; (ii.) Philology.

“A Book of French Prosody,” by Professor Brandin and W. G. Hartog.

FEE:—£1 11s. 6d.

(b) Mondays at 1.30: Papers, Conversation and Debates.

FEE:—£1 11s. 6d.

(c) Mondays at 3.30: Lectures on French History and Institutions. This course will consist of (i) lectures on Life, Civic, etc., in Modern France, during the Winter Term, (ii.) on the History of France and its Institutions, during the Spring Term.

(i.) A set of Lectures on “MODERN FRANCE, ITS CIVIC LIFE, ETC.,” will be delivered *in French* on Mondays at 3.30 p.m. during the Winter Term.

FEE for the term, 10s. 6d.

(For the Syllabus see next page.)

(ii.) A set of Lectures on the “HISTORY OF FRANCE AND ITS INSTITUTIONS” will be delivered *in French* on Mondays at 3.30 p.m. during the Spring Term.

FEE for the term, 10s. 6d.

(d) Tuesdays at 9.30: French Philology, Old French Dialects.

The Old Picard French Text will be “*Aucassin et Nicolette*.”

FEE:—£1 11s. 6d.

(e) Tuesdays at 11.30 : English and French Literature. Their mutual influence through the centuries down to our own times.

(f) Tuesdays at 12.30 : Reading and Transliteration (a) into popular Latin, (b) into modern French, of "La Chanson de Roland ;" Critical and Philological comments.

FEE :—£1 11s. 6d.

(g) Thursdays at 3.30 : the Romantic School, and the 19th Century Developments in French Poetry since Lamartine and Victor Hugo (Parnassiens, Symbolistes, Décadents ; Réaction.)

FEE :—£1 11s. 6d.

(h) Thursdays at 4.30 : French Literature from the earliest origins.

Constans' "Chrestomathie de l'Ancien Français."

FEE :—£1 11s. 6d.

(i) Thursdays at 1.30 (or Mondays at 4.30) : Reading, Interpretation, Philological and Critical Analysis of the Old French Romaunt "Le Chevalier au Lyon," de Chrestien de Troyes.

FEE :—£1 11s. 6d.

*MODERN FRANCE.—SYLLABUS OF THE WINTER TERM LECTURES.*

Territorial formation : Plains, plateaus, and mountains France over seas.

Historical Survey of *political development* : the ancient régime, the revolution, the 19th Century and after—the existing Constitution : universal suffrage, the Senate, the Chamber of Deputies, the National Assembly,

Parliamentary Procedure ; the President of the Republic, the Ministers and their responsible status.

Historical origin of *administrative centralisation* ; how Ministerial departments work ; the Council of State. *Local Administrations* ; the Department, the Prefect and the Council General ; the Arrondissement and the Sub-Prefect ; the Canton ; the "Commune," the Mayor, the Municipal Council. The supervision of the Central Administration.

*Military and Naval France* : Conscription, officers, military schools ; discipline, court-martials.—Maritime Prefectures ; fighting fleet ; conscription of sailors ; officers ; marines.

*Commercial Navy* : Ships entering and clearing from chief ports ; mail service ; ocean fisheries.

Characteristics of *French Legislation* ; its origins, the codes, later Laws, Nationality, the Family, Property, Inheritance.—Police, Penal Procedure, Punishments, "Récidivistes," Penal Establishments, Penal Colonies—Civil and Criminal Justice, Judges and "Ministère Public," Jury, Barristers—the organs of Administrative Justice. Special Courts. Commercial Courts.

*Economic France* : Agriculture ; sub-division of the land ; methods. Agricultural manufacture. Wages, Mines and Factories—roads, canals, railways—Home and Foreign trade ; customs system—posts and telegraphs—Money : Metrical system—Banking ; Bank of France ; Savings Banks ; Public Pawnshops ; Public Wealth ; Communal, Departmental, and State Revenue and Expenditure ; Direct and Indirect Taxes, Monopolies and Domain Lands ; Public Debt ; Administrative Expenditure. The Budget : its Preparation, Voting, Disposal ; its Control by the "Cour des Comptes" and by Parliament.

*Education and Instruction* : A Contrast—Primary, secondary and higher teaching establishments ; schools ; collèges and lycées ; "Faculties"—Free education

Teaching staffs—"Baccalauréat," and University degrees—Education of women—Special and professional higher schools—the French equivalent for the British Royal Society: the "Institut de France."

*Colonial France*: Historical Survey of the Formation of the French Colonial Empire. Present conditions in Algeria, Tunis, Senegal and Upper Niger; French Coast of Guinea; Gaboon and French Congo; Madagascar and Islands of the Indian Ocean; Obock; India and Indo-China; New Caledonia and French Polynesia; Newfoundland banks; French Antilles and Guinea.

*Ecclesiastical France*: Liberty of conscience and of Public Worship; the Catholic Church: its struggles with the Civil Power; the Concordat of 1801; its recent repudiation; the new organisation of Catholic Worship, the secular Clergy. Religious Communities—Reformed and Lutheran Churches—Jewish Church—Mohammedan Church.

*France and England*: French and English interests, their ancient antagonism—Hundred Years' war—Colonial wars—Wars of the French Revolution and the Empire—Modern period: improved relations, the Crimea, "l'entente cordiale" during the Second Empire and the Third Republic—Nefarious influence of the most blatant section of an irresponsible Press on both sides. Trade and navigation between the two powers.

For Vacation Reading, see page 428.

#### REQUIREMENTS FOR DEGREES.

*Intermediate Examination in Arts*: Course I.

*B.A. Degree*:

(a) When French is a Principal Subject: Courses II. and III. in successive years.

(b) When French is a Subsidiary Subject: Course II.

*M.A. Degree :*

(a) Candidates who desire to take the M.A. Degree in French alone will be required to take the following eight subjects :—

- (i.) French Essay and Composition.
- (ii.) Unseen Translation.
- (iii.) Selected Authors.
- (iv.) History of French Literature.
- (v.) French History and Institutions.
- (vi.) Old and Middle French Texts.
- (vii.) French Philology.
- (viii.) A selected period of French Literature.

(b) Candidates who desire to take the M.A. Degree in French together with another subject will be required to select four subjects from the above list, of which (i.) and (iii.) are compulsory.

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## SCHOOL OF MODERN LANGUAGES.

For regulations relating to the School of Modern Languages, see p. 169.

The following Courses are recommended :

(a) If French is the principal subject :—

- First year : Courses II., III., IVd.
- Second year : Courses III., IV b, d, g.
- Third year : Course IV.

(b) If French is the subsidiary subject :—

- First year : Courses II. and IIIc.
- Second year : Courses III. and IVg.
- Third year : Course IVa, b, d, g.

*Cercle Français.*—Every fortnight there is a social gathering where only French is spoken. Tea is followed by society games, interesting readings, singing, or short dramatic performances, with intervals for more conversation.

## TIME TABLE.

FRENCH.	Mon.	Tues.	Wed.	Thurs.	Fri.
Preliminary	... 3.30	...	...	2.30 3.30	
Course I.					
Section A $\alpha$	... 3.30	...	...	4.30 11.30	
Section A $\beta$	... 4.30	...	...	4.30 11.30	
Section B	... 4.30	4.30	...	...	11.30
Course II.	... 9.30	9.30	...	...	9.30
Commerce	... 10.30	...	...	...	...
Course III.	... 2.30	10.30	...	...	10.30
Course IV.	1.30 2.30 3.30 4.30*	9.30 ... 11.30 12.30	...	1.30* ...	...

(\* Are two alternatives.)

## GERMAN LANGUAGE AND LITERATURE AND GERMANIC PHILOLOGY.

*Professor* : KARL WICHMANN, Ph. D.

*Lecturer* : FRANCIS E. SANDBACH, M.A., Ph.D.

*Special Lecturer in Commercial German* :

F. E. SANDBACH, M.A., Ph.D.

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### PRELIMINARY COURSE.

Mondays, Thursdays, and Fridays, at 2.30.

In this Course students are prepared for the Matriculation Examination of the University of Birmingham.

Kuno Meyer, German Grammar (Swan Sonnenschein).

E. A. Sonnenschein and H. G. Fiedler, First German Reader and Writer (Swan Sonnenschein).

W. Stuart MacGowan, Second German Reader and Writer (Swan Sonnenschein).

Riehl, Die vierzehn Nothelfer (Swan Sonnenschein).

FEE :—£3 13s. 6d.

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### COURSE FOR SCIENCE STUDENTS.

Mondays and Thursdays at 12.30.

H. G. Fiedler and F. E. Sandbach, First German Course for Science Students (De la More Press).

H. G. Fiedler and F. E. Sandbach, Second German Course for Science Students (De la More Press).

FEE :—£2 12s. 6d.

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## UNIVERSITY COURSES.

## I.

(a) Mondays at 11.30 : German Accidence, Syntax, and Composition.

Kuno Meyer, German Grammar (Swan Sonnenschein).  
H. G. Fiedler, Third German Reader and Writer  
(Swan Sonnenschein).

(b) Thursdays at 3.30 : Conversation based on Selected Poems, Dictation, and Translation at sight.

(c) Fridays at 3.30 : Reading and Translation of : Riehl, Meister Martin Hildebrand (Rivington); Fontane, Vor dem Sturm (Macmillan); Schiller's Ballads, *ed.* Johnson (Heath).

FEE :—£3 13s. 6d.

## II.

(a) Tuesdays at 3.30 : Reading of : E. v. Wildenbruch, Die Danaide; Goethe's Poems, *ed.* Atkins (Blackie). Chapters 51 to 57 of Kluge, Geschichte der deutschen National-Literatur.

(b) Thursdays at 3.30 : Conversation based on Selected Poems.

(c) Fridays at 4.30 : Composition, Revision of Accidence and Syntax, Historical German Grammar.

FEE :—£3 13s. 6d.

## III.—A. ARTS.

(a) Mondays at 4.30 : Reading of : Goethe, Iphigenie ; Hebbel, Die Nibelungen ; G. Hauptmann, Die versunkene Glocke.

(b) Tuesdays, at 4.30 : Composition.

(c) Thursdays at 4.30 : Conversation based on Chapters 1-50 of Kluge's Geschichte der deutschen National Literatur and on Modern German Poetry.

In the Classes of Course III. only German will be spoken

FEE :—£3 13s. 6d.

*III.—B. COMMERCE.*

- (a) Mondays at 4.30 : Reading of typical examples of commercial and industrial literature.
  - (b) Tuesdays at 4.30 : Composition.
  - (c) Thursdays at 10.30 : Commercial Correspondence.
- FEE :—£3 13s. 6d.

*IV.**LITERATURE.*

- (a) Tuesdays at 3.30 : Lectures (delivered in German) on German Romanticism.

*SYLLABUS.*

Jean Paul Richter.

Die Philosophen Fichte, Schelling, Schleiermacher.

Die Brüder Schlegel, Ludwig Tieck, Novalis.

Zacharias Werner ; Heinrich von Kleist.

E. T. A. Hoffman.

Clemens Brentano, Achim von Arnim, Die Brüder Grimm.

Friedrich de la Motte Fouqué, Joseph von Eichendorff, Adalbert von Chamisso.

Die Philosophen Hegel, Herbart, Schopenhauer.

Wilhelm Hauff, Ludwig Uhland, Eduard Mörike.

K. L. Immermann.

Heinrich Heine.

FEE :—£1 11s. 6d.

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*HISTORY AND INSTITUTIONS.*

- (b) Thursdays at 5.30, Spring Term.

This course consists of two sets of lectures delivered in English, and given in alternate years :

- (i.) Outlines of German History.
- (ii.) Institutions of Modern Germany.

The Second Course will be given in Session 1907-8.

The following subjects will be dealt with :—

The Constitution of the German Empire. The relation of the various German States to the Empire

The constitutional rights and prerogatives of the Kaiser. The Reichskanzler and the Secretaries of State. The Bundesrat and Reichstag. Parties in the present German Parliament. The constitutions of Prussia and the other German States.

The making of Modern Germany. The old Empire and the new, a comparison. The Zollverein. The North German Confederation. Bismarck. The Franco-German War. German colonial policy.

The German country. Advantages and dangers of Germany's geographical position. Different character of North and South, East and West. Physical features and natural resources. The principal German towns.

Administration and Institutions. The Reichsgericht and Judicature. Local Government. Posts and Telegraphs. Railways and Canals. Customs and Tariffs.

The German Army and Navy. Conscription, and its influence on national life, character, and education. The training of the German Officer.

Germany's Educational System. Elementary and Secondary Schools. Technical and Commercial Education. The German Universities. The training of the Teachers. Student life.

German agriculture, commerce, and manufacture. Social problems and social legislation. Conditions of the Working Classes. The German Press.

Church and religious life. Public and social life.

Art culture in Germany. Music and the Drama. Modern German architecture and handicraft. Modern German Painters and Sculptors.

The lectures will be illustrated by maps, diagrams, and limelight views.

FEE :—10s. 6d.

*PHILOLOGY.*

(c) Mondays at 12.30 : Germanic Philology. Lectures will be given (in English) on the principles and methods of the Science of Language and the history and philology of the Germanic languages, with special reference to the relation of English and German. The Gothic version of the Gospels will be read.

FEE :—£1 11s. 6d.

(d) Mondays at 10.30 : Old High German Grammar, with Interpretation of O.H.G. texts.

FEE :—£1 11s. 6d.

(e) Tuesdays at 10.30 : Introduction to the study of Middle High German and Historical German Grammar. Reading of easy M.H.G. texts.

FEE :—£1 11s. 6d.

(f) Thursdays at 3.30 : Interpretation of more difficult M.H.G. and sixteenth century texts.

FEE :—£1 11s. 6d.

*SEMINAR.*

(g) Mondays at 3.30 : Essay Writing. Discussion of Literary and Philological problems. Introduction to Bibliography and Methods of Research.

FEE :—£1 11s. 6d.

VACATION READING : see page 428.

*REQUIREMENTS FOR DEGREES.*

*Intermediate Examination in Arts* : Course I.

*B.A. Degree* :

(a) When German is a principal subject : Courses II. and III., in successive years.

(b) When German is a subsidiary subject : Course II.

*M.A. Degree* :

(a) Candidates who desire to take the M.A. Degree in German alone will be required to take the following eight subjects :—

- (i.) German Essay and Composition.
- (ii.) Unseen Translation.
- (iii.) Selected Authors.
- (iv.) History of German Literature.
- (v.) German History and Institutions.
- (vi.) Old and Middle High German Texts.
- (vii.) Germanic Philology.
- (viii.) A selected period of German Literature.

(b) Candidates who desire to take the M.A. Degree in German together with another subject will be required to select four subjects from the above list, of which (i.) and (iii.) are compulsory.

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#### SCHOOL OF MODERN LANGUAGES.

For regulations relating to the School of Modern Languages see p. 169.

The following courses are recommended :—

- (a) If German is the principal subject :—
    - First year : Courses II., III., IVb, c.
    - Second year : Courses III., IVa, c, d, e, f
    - Third year : Course III., IVa, d, e, f, g.
  - (b) If German is the subsidiary subject :—
    - First year : Courses II. and IIIa.
    - Second year : Courses III. and IVa.
    - Third year : Courses IVa, b, c, e.
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#### ANGLO-SAXON.

ADVANCED.—Mondays at 5.30, or by arrangement.

The books set in Group B of the M.A. examination in English (University of Birmingham) will be studied.

FEE :—£1 11s. 6d.

Students joining this class are expected to attend the lectures on Germanic Philology (IV c).

FEE :—£1 11s. 6d.

## TIME TABLE.

	Mon	Tues.	Wed.	Thurs.	Fri.
Preliminary Course	2.30	...	...	2.30	2.30
Course for Science Students ...	12.30	...	...	12.30	...
Course I. ...	11.30	...	...	3.30	3.30
Course II. ...	...	3.30	...	3.30	4.30
Course III A. ...	4.30	4.30	...	4.30	...
Course III B. ...	4.30	4.30	...	10.30	...
Course IV. ...	10.30 12.30 3.30	10.30 3.30	...	3.30 5.30	...
Anglo-Saxon ...	5.30	...	...	...	...

## PHILOSOPHY.

*Professor* : JOHN HENRY MUIRHEAD, M.A. ; LL.D.

*Lecturer* : HELEN MARION WODEHOUSE, D.Phil.

### UNIVERSITY COURSES.

#### *I.*

#### *LOGIC.*

The aim of this Course is to familiarise students with the general conditions of right reasoning in ordinary life, and in observational and experimental science. A good deal of time is given to the analysis of familiar types of argument.

*Lecture days* :—Mondays, Tuesdays, and Thursdays at 9.30.

#### I. LOGIC OF ARGUMENT.

*Logic is the Science of the justification of assertions.*

Traditional forms for assertion. Doctrine of Propositions.

*Some assertions cannot be justified because of their meaning.*

Doctrine of Meaning. Connotation. Definition. Universe of Discourse.

*Justification takes place by means of argument.*

Doctrine of Argument. Fundamental type of argument. Fundamental fallacies. Traditional forms. Syllogisms, etc.

#### II. LOGIC OF THE FOUNDATION OF ARGUMENT.

*All argument rests on what we cannot help thinking.*

*Under this we get both 'given facts' and the laws of our thought itself.*

A. Observation ; testimony ; arrangement of facts. The use of accumulating instances. Mill's methods of usual induction. Nature of causation. Explanation. Analogy. Hypothesis.

B. The thought that makes our world of knowledge. Concept. Judgment. Inference. Laws of Non-contradiction, etc. Uniformity of Nature.

BOOKS RECOMMENDED FOR CONSULTATION : Mill's *System of Logic* ; Keyne's *Formal Logic* ; Venn's *Empirical Logic* ; Jevons's *Principles of Science*.

FEE :—£3 13s. 6d.

PREPARATORY READING.—Students intending to take this course should make themselves familiar with Jevons's *Primer* (Macmillan), and with the chapters 3 to 9 and 13 to 15 in *An Introductory Logic*, by Edwin Creighton (Macmillan).

## II.

### PSYCHOLOGY.

This Course is given in alternate years. It will be next given in October, 1907. Its aim is to give such an analysis of the chief elements in consciousness as may form an introduction to Mental Philosophy on the one hand and to the Principles and Practice of Education on the other.

*Lecture Days* :—Tuesdays, Thursdays, and Fridays, at 12.30.\*

**SCOPE AND METHOD OF THE SCIENCE** : What is meant by Mind ; Consciousness and Subconsciousness ; Relation of Psychology to other Sciences ; Psychological Methods.

**GENERAL ANALYSIS OF MIND** : Knowledge, Feeling, and Action as Modes of Consciousness ; their general relation to one another.

**KNOWLEDGE** : Elementary processes implied in Knowledge ; Attention, Retention, and Habit, Discrimination and Assimilation. **THE SENSES** : General Treatment ; Law of Relativity. **PERCEPTION** : Our knowledge of Things in Space and Time. **IDEAS** : Association ; Memory ; Imagination. **CONCEPTION** : General Nature of Conceptual Thinking ; Relation of Language to Thought ; Categories of Thought ; The Idea of a Physical World ; the Idea of Self.

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\* NOTE.—Some of these hours may be altered to suit the convenience of Students.

**FEELING** : General Nature and Conditions of Feeling. The Affective side of Perceptive and Ideational Experience. Emotion. The Emotions and their Expression. The Sentiments.

**ACTIVITY** : Instinctive and Automatic Action. Voluntary Action ; Desire and Motive ; Deliberation and Choice. Habit and Character.

**BOOKS RECOMMENDED** : Stout's *Manual of Psychology*, and *Groundwork of Psychology*; Höffding's *Outlines of Psychology*; James's *Principles of Psychology*; Wundt's *Outlines of Psychology*; Thorndike's *Elements of Psychology*.

**FEE** :—£3 13s. 6d.

**PREPARATORY READING**.—Students intending to take this course should read Stout's *Groundwork of Psychology* (University Tutorial Press).

### III.

#### MORAL PHILOSOPHY.

The aim of this Course is to give an outline of the leading principles of moral and social obligation as at present understood and to illustrate them by bringing them into connexion with typical historical theories and modern problems. It will next be given in Session 1908-9.

**Lecture Days** :—To be arranged.

I.—**SCOPE AND CONTENTS OF ETHICS** : DEVELOPMENT OF CONDUCT, in the race and in the individual. PSYCHOLOGY OF CONDUCT. SKETCH OF ETHICAL THEORY. Self-realisation. The individual and society. The General Will. Institution and Laws ; rights ; punishment. VIRTUE AND DUTY. The special virtues.

II. **THEORIES OF ETHICS**.—GREEK ETHICS : Plato, Aristotle, Stoics, Epicureans. MEDIÆVAL ETHICS and theology. (The question of Determinism). Mediæval political theories. Social conduct and law of nature. MODERN ETHICAL THEORIES : Hobbes. Intuitionism. Hedonism. PRESENT DAY ETHICS : Utilitarianism and Idealism.

*Text-book* : MACKENZIE, *Manual of Ethics*.

OTHER BOOKS RECOMMENDED : SIDGWICK, *Methods of Ethics* ; G. E. MOORE, *Principia Ethica* ; BRADLEY, *Ethical Studies* ; BOSANQUET, *Philosophical Theory of the State* ; MUIRHEAD, *Elements of Ethics* ; SIDGWICK, *History of Ethics*.

FEE :—£3 13s. 6d.

#### IV.

##### *METAPHYSICS. A.*

1. Introduction to Philosophy. 2. Greek Philosophy with special reference to Plato and Aristotle.

One Lecture a week. One hour discussion class.

Times to be arranged with students.

FEE :—£1 11s. 6d.

#### V.

##### *METAPHYSICS. B.*

1. History of Modern Philosophy, with special reference to Kant and Hegel. 2. Kant's *Critique of Pure Reason* (Watson's Selection).

One Lecture a week. One hour discussion class.

Times to be arranged.

FEE :—£1 11s. 6d.

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#### *REQUIREMENTS FOR DEGREES.*

##### *B.A. Degree :*

1. For Candidates taking Philosophy as a subsidiary subject, having already taken Logic at the Intermediate : either Course II. or Course III. For candidates who have not taken Logic ; either Course I., along with Bosanquet's *Essentials of Logic*, and Mill's *Logic*, book III., chapters ters 3 to 16, or Course II., or Course III.

2. For Candidates taking Philosophy as a principal subject, having already taken Logic at the Intermediate Examination : Courses II. and III. in successive years.

A second Philosophical subject may be taken along with any other Philosophical subject as a second subsidiary subject.

*B.Sc. Degree :*

For Candidates taking Psychology as a subsidiary subject : Course II., with Külpe's *Outlines of Psychology*, Part I.

*M.A. Degree :*

**A.—SUBJECT OF EXAMINATION.**

1. Candidates taking Philosophy alone for the M.A. Degree will be examined in :

- A. (1) PSYCHOLOGY : Ward's Article on Psychology (Encyc. Brit. with Supplement); Stout's Analytic Psychology and Manual of Psychology; James's Principles of Psychology.
  - (2) LOGIC AND METAPHYSICS : Mill's System of Logic, Bks. II. and III.; Bradley's Logic; Bosanquet's Logic; Bradley's Appearance and Reality; Wallace's Logic of Hegel with Prolegomena; Taylor's Elements of Metaphysics.
  - (3) MORAL AND POLITICAL PHILOSOPHY : Plato's Republic; Aristotle's Ethics; Kant's Theory of Morals (Abbott); Green's Prolegomena to Ethics; Bosanquet's Philosophical Theory of the State; Spencer's Data of Ethics.
  - (4) The General History of Philosophy, together with portions of important writers to be read under the direction of the Professor, and the special history of one of the above departments of Philosophy.
- B. An essay on a subject chosen in consultation with the Professor of Philosophy.

2. Candidates taking Philosophy together with another subject for the M.A. Degree will be examined in :

- (1) PSYCHOLOGY : Ward's Article on Psychology (Encyc. Brit. with Supplement); Stout's Analytic Psychology and Manual of Psychology.
- (2) LOGIC AND METAPHYSICS : Mill's System of Logic, Bks. II. and III.; Bosanquet's Logic; Wallace's Logic of Hegel with Prolegomena. Bradley's Appearance and Reality.

- (3) MORAL PHILOSOPHY : Aristotle's Ethics ; Hobbes's Leviathan ; Green's Prolegomena to Ethics ; Spencer's Data of Ethics. Bosanquet's Philosophical Theory of the State.
- (4) The General History of Philosophy, with portions of important writers to be read under the direction of the Professor.

*B.—ATTENDANCE ON LECTURES AND CLASSES.*

Candidates taking the M.A. Degree in one year must attend both of the Courses IV. and V., with the discussion classes connected with them.

Candidates taking the M.A. Degree in two years must take at least one of them in the first year, the other in the second year, with the discussion classes.

TIME TABLE.

PHILOSOPHY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I. ....	9.30	9.30	...	9.30	...
Course II. ....	...	12.30	...	12.30	12.30
Course III. ....				<i>By arrangement.</i>	
Course IV. A ...				{ <i>By arrangement.</i> }	
Course IV. B ...					

**HISTORY.**

*Professor* : J. H. B. MASTERTON, M.A. ; M.A. (Cantab.).

*Lecturer* : ROSE SIDGWICK.

**PRELIMINARY COURSE.**

Tuesdays and Thursdays, at 9.30.

Outlines of English History, with special reference to Green's *Short History of the English People*.

FEE :—£2 12s. 6d.

**UNIVERSITY COURSES.***I.**BRITISH INSTITUTIONS.*

Tuesdays, Wednesdays, and Fridays, at 10.30.

FEE :—£3 13s. 6d.

*WINTER TERM.*

THE BRITISH CONSTITUTION : Origin and Development of the Constitution ; King and Parliament ; the Cabinet ; Privy Council.

*SPRING TERM*

THE BRITISH CONSTITUTION : Judicature. Local Government. Parish and County Councils ; Poor Law Administration ; Education.

*SUMMER TERM.*

COLONIAL CONSTITUTIONS : Constitutional System of the United States. Imperial Federation.

*II.**MODERN HISTORY.*

A. *European History, 1600—1789.*

Tuesdays, Wednesdays, and Fridays, at 12.30.

FEE :—£3 13s. 6d.

## WINTER TERM.

Europe in 1600. Henry IV. of France. The Thirty Years War. France under Richelieu and Mazarin.

## SPRING TERM.

France under Louis XIV. Wars. The Spanish Succession. Eastern Europe. Colonial Development.

## SUMMER TERM.

The Rise of Russia. France under Louis XV. Rise of Prussia and Frederick the Great. Europe in the Eighteenth Century.

B. *European History from 1789.*

Tuesdays and Fridays, at 11.30, and Wednesdays, at 9.30.

FEE:—£3 13s. 6d.

## WINTER TERM.

THE ERA OF REVOLUTION, 1789-1815. Europe in 1789. The French Revolution. Rise and Career of Napoleon. The Congress of Vienna.

## SPRING TERM.

THE ERA OF REACTION, 1815-1860. Metternich and the Holy Alliance. Revolutions of 1830 and 1848. Napoleon III. The Crimean War.

## SUMMER TERM.

THE ERA OF PROGRESS. The Union of Italy. The Founding of the German Empire. The American Civil War. Modern Europe and its Problems.

## III.

*ANCIENT HISTORY.\**A. *Outlines of Greek and Roman History.*

Lecture days to be arranged.

## WINTER TERM.

The prehistoric age of Greece. The migrations and expansion of Greece. The rise of the republics. The Persian Wars. Athenian supremacy. The Peloponnesian War and downfall of Athens.

\* This course will be given by Mr. Caspari, Lecturer in Greek.

## SPRING TERM.

The supremacy of Sparta and Thebes. The rise of Macedon. Greek expansion under Alexander. The Hellenistic kingdoms. The rise of the Roman republic. The early Punic Wars.

## SUMMER TERM.

The Eastern conquests of Rome. The reaction of Greek culture upon the Romans. The breakdown of the Roman republic. The Civil Wars and institution of the monarchy.

B. *Outlines of the History of the Hebrew Nation.*

Lecture days to be arranged.

## WINTER TERM.

Authorities for Hebrew History. Early traditions. The settlement in Palestine. Development of legal and ceremonial system.

## SPRING TERM.

The Period of the Kings. The growth of prophetic literature. Relations with Syria and with Assyria. The fall of Israel and Judah. The exile.

## SUMMER TERM.

The post-Exilic period : its characteristics and literature. Relations with Persia, Greece, and Rome. The beginning of Christianity. The fall of Jerusalem.

FEE :—£2 12s. 6d.

## IV.

## M.A. Course.

*THE FRENCH MONARCHY IN THE EIGHTEENTH CENTURY.*

Two lectures a week. Times to be arranged.

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## REQUIREMENTS FOR DEGREES.

*Intermediate Arts Examination:* Course I.

*B.A. Degree:*—Course II. A and B, or Course III. A and B, as a principal subject. Either part of Course II. or Course III. as a subsidiary subject.

*M.A. Degree:*—Course IV.

## TIME TABLE.

HISTORY.	Mon.	Tues.	Wed.	Thurs.	Fri.
Preliminary Course	...	...	9.30	...	9.30
Course I.	...	...	10.30	10.30	...
Course II. A	...	...	12.30	12.30	...
Course II. B	...	...	11.30	...	9.30
Course III. A & B	...			<i>By arrangement.</i>	
Course IV.	...	...		<i>By arrangement.</i>	

## THEORY AND PRACTICE OF EDUCATION.

*Organising Professor:* ALFRED HUGHES, M.A.;  
M.A. (Oxon.); B.A. (Manch.)

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## UNIVERSITY COURSES.

## I.

## ELEMENTARY COURSE IN PSYCHOLOGY AND LOGIC

*Professor:* JOHN H. MUIRHEAD, M.A., LL.D.

*Lecturer:* HELEN M. WODEHOUSE, D.Phil.

## SYLLABUS.

Tuesdays, and Fridays, at 10.30.

## A. ELEMENTS OF PSYCHOLOGY.

Body and Mind. Evolution of Mind. The Senses and their Training. Perception and Observation. Ideas and their Sequence. Memory and the Training of Memory. Fancy and Imagination. Formation of Concepts. Consecutive Thinking. Feeling and the Feelings. The Sentiments and their Training. Will and Conduct. Habit and Character.

BOOKS RECOMMENDED: James's *Text Book of Psychology* (selected chapters); Thorndike's *Elements of Psychology*.

## B. PRACTICAL ETHICS.

The Meaning of Goodness, and the Ground of Obligation. Types of goodness: the Virtues individual and social. Moral Training as the development of moral sentiment. The place of direct Moral Instruction.

Sketch lessons on Courage; Self-control; Truthfulness; Law and Government; Justice; The Visible and the Invisible.

The use of the Bible and Religious Literature.

BOOK RECOMMENDED: MacCunn's *Making of Character* (Cambridge University).

Moral Lessons will be given by the students themselves in connection with this Course.

If a third hour can be found either in Autumn or Spring Term nine Lectures will be given on

#### C. ELEMENTS OF LOGIC.

Terms and their Meaning. Kinds of Judgments. Reasoning. Types of Reasoning. Syllogism. Analogy. Analysis of Observation and Experiment. Hypothesis and Verification. Fallacies.

TEXT BOOK RECOMMENDED : Jevon's *Primer of Logic* (Macmillan).

FEE :—£3 3s.

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#### II.

#### THEORY AND PRACTICE OF TEACHING.

Lecturers : { FRANK ROSCOE.  
                  { ANNE HOLLINGWORTH JOYCE, B.A.

Lectures :—Wednesdays, 10.30 and 11.30.

Tutorial Classes :—Tuesdays, 10.30 ; Mondays, 11.30.

#### I.—MEANING AND SCOPE OF EDUCATION.

#### II.—GRADES OF SCHOOL EDUCATION ; THEIR SPECIAL AIMS AND GENERAL METHOD.

1. Kindergarten and Infant School (Women).
2. Primary School.
3. Secondary School.

#### III.—EDUCATIONAL VALUES AND COURSES OF STUDY.

#### IV.—CORRELATION OF STUDIES.

#### V.—SPECIAL METHOD :—

- Teaching of (1) English Language and Literature.  
 (2) History and Geography.  
 (3) Mathematics.  
 (4) Nature Study and Elementary Science.  
 (5) Drawing and Singing.  
 (6) Needlework and Manual Training.

#### VI.—DISCIPLINE AND MORAL TRAINING.

#### VII.—SCHOOL ORGANISATION.

#### VIII.—PHYSICAL EDUCATION AND SCHOOL HYGIENE.

The Course also includes Teaching under supervision for a period of six weeks, the specific observation of children in school, attendance at demonstration lessons, school visits, and educational conferences.

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### III.

#### *HISTORY OF EDUCATIONAL IDEAS.*

*Lecturer : FRANK ROSCOE.*

*Lectures :—Three hours per week by arrangement.*

#### SYLLABUS.

##### WINTER TERM.

*Greek Education* : Music and Gymnastic. Theories of Plato, Aristotle, Xenophon.

*Roman Education* : Early Period. Theories of Quintilian.

*Mediaeval Education* : Scholasticism. Trivium and Quadrivium. Rise of Universities. Abelard.

##### SPRING TERM.

*The Renascence* : Classicism. Vittorino da Feltre. Erasmus. Luther.

*Teaching of Languages* : Sturm. The Jesuits. The Jansenists. Ascham. La Salle.

*Revolt from Classicism* : Rabelais. Montaigne. Fénelon. Comenius. Milton. Locke.

##### SUMMER TERM.

*18th and early 19th Century* : Return to Nature. Rousseau. Kant. Pestalozzi. Fröbel.

*19th Century Education* : Bell. Lancaster. Rise of Scientific Psychology. Herbart. Bain. Spencer. Modern tendencies.

*Special Period for 1908* : The 19th Century.

#### TEXT BOOKS RECOMMENDED

*The Educational Ideal* (F. O. Munroe).

*General History of Pedagogy* (Compayré).

*Educational Reformers* (Quick).

Students are also required to obtain adequate acquaintance with the original authorities as directed during the lectures.

FEE.—£3 13s. 6d.

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*REQUIREMENTS FOR DEGREES.*

*Intermediate Science or Arts Examination:* Courses I. and II.

*B.A. Degree* (subsidiary subject) : Course III.

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*TIME TABLE.*

COURSE.	Mon.	Tues.	Wed.	Thurs.	Fri.
Course I. ... ... ... 10.30 ... ... 10.30					
Course II. ... ... 11.30† 10.30† 10.30 11.30					
Course III. ... ...				<i>By arrangement.</i>	

— — —  
† Tutorial Class.

## MUSIC.

(Chair of Music, founded in 1905 by Mr. Richard Peyton.)

*Professor : SIR EDWARD ELGAR, Mus.D. (Oxon., Cantab.,  
Dunelm et Yale, U.S.A.), LL.D. (Leeds, Aberdeen,  
and W. University, Pennsylvania.)*

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Lectures will be given in November. The dates of these and of further lectures on special subjects will be announced later.

The Professor may be consulted at the University on musical matters on certain days which may be ascertained on application to the Secretary.

## SPANISH AND ITALIAN.

*Lecturer* : F. DE ARTEAGA, M.A. (Oxon.).

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### Spanish.

#### UNIVERSITY COURSES.

##### *I.*

Tuesdays, Thursdays, and Saturdays at 11.30.

FEE :—£3 13s. 6d.

##### WINTER TERM.

Accidence, Elementary Syntax, Easy Conversation. Arteaga's "Practical Spanish."

##### SPRING TERM.

Advanced Syntax. Idioms. Conversation. Pérez Galdós, *Tormento*.

##### SUMMER TERM.

Composition, Proverbs. Calderon, *La Vida es sueño*.

##### *II.*

Tuesdays at 12.30 and 2.30, Thursdays, at 2.30.

FEE :—£3 13s. 6d.

##### WINTER TERM.

Synonyms. Advanced Composition. Letter-Writing, Spanish Readings.

##### SPRING TERM.

Abridged Course of Spanish Literature. Readings in Verse and Prose from the best Spanish authors (especially modern Authors).

##### SUMMER TERM.

Abridged Spanish History (principally modern history). Readings from the best Spanish Historians.

*III. COMMERCE.*

Tuesdays at 3.30, and Thursdays, at 12.30 and 4.30.

FEE :—£2 12s. 6d.

## WINTER TERM.

Commercial Correspondence.

## SPRING TERM.

Commercial Geography and Institutions of Spain.

## SUMMER TERM.

Spanish Commercial and Industrial Literature.

## Italian.

## UNIVERSITY COURSES.

*I.*

Tuesdays and Thursdays, at 11.30 ; Saturdays at 12.30.

FEE :—£3 13s. 6d.

## WINTER TERM.

Accidence, Elementary Grammar, Easy Conversation, Perini, "An Italian Conversation Grammar."

## SPRING TERM.

Advanced Syntax, Idioms, Conversation. De Amicis, *Cuore*.

## SUMMER TERM.

Composition. Proverbs. Fogazzaro, *Il Santo*.

*II.*

Tuesdays, Thursdays, and Saturdays, at hours to be arranged.

FEE :—£3 13s. 6d.

## WINTER TERM.

Synonyms, Advanced Composition, Letter Writing Italian Readings.

## SPRING TERM.

Abridged Course of Italian Literature. Readings in Verse and Prose from the best Italian Authors (especially modern Authors).

## SUMMER TERM.

Abridged Italian History, principally modern History. Readings from the best Italian Historians.

*III. COMMERCE.*

Tuesdays and Thursdays at hours to be arranged.

FEE :—£2 12s. 6d.

## WINTER TERM.

Commercial Correspondence.

## SPRING TERM.

Commercial Geography and Institutions of Italy.

## SUMMER TERM.

Italian Commercial and Industrial Literature.

## TIME TABLE.

COURSE.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Spanish—						
Course I.	...	...	11.30	...	11.30	...
Course II.	...	...	{ 12.30 2.30	...	2.30	...
Course III.	...			To be arranged.		
Italian—						
Course I.	...	...	...		To be arranged.	
Course II.	...				To be arranged.	
Course III.	...				To be arranged.	

## SOCIAL STUDY.

### *EXECUTIVE COMMITTEE:*

PROFESSOR ASHLEY. PROFESSOR MUIRHEAD.

PROFESSOR MASTERNAN. JOHN ROBERTSON, M.D., B.Sc.

MISS SIDGWICK, *Librarian.*

PROFESSOR KIRKALDY, *Secretary.*

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The following Course of Study will be available by special arrangement with local artizan or other organized bodies during the Session 1907-8:

I. THE SOCIAL IDEAL. Professor J. H. MUIRHEAD.

1. The Need of Knowledge.
2. Some Fundamental Facts of Life and Mind.
3. What Makes Life Human?
4. Social Progress.
5. Individualism and Socialism.

II. SOCIAL ECONOMICS. Professor A. W. KIRKALDY.

1. The Basis and Development of Economic Life.
2. What the Landlord does and what he gets.
3. What the Manufacturer does and what he gets.
4. What the Workman does and what he gets.
5. Possible and impossible ideals.

III. INDUSTRIAL ORGANISATION. Professor W. J. ASHLEY.

1. The Problem of Co-operation.
2. The Problem of the Factory.
3. The Problem of Capitalist Combination.
4. The Problem of Trade Unionism.
5. The Problem of State Interference.

III. (Suspended during 1907-8).

IV. LOCAL ADMINISTRATION. Professor J. H. B. MASTERNAN.

1. Principles of English Local Government.
2. History of the English Poor Law.
3. Poor Law Administration.
4. National Education.
5. The Education Act of 1902.

V. PUBLIC HEALTH AND HOUSING. JOHN ROBERTSON, M.D.

1. Definitions of Health.
2. Communicable Diseases.
3. Nutritional Requirements.
4. Environment.
5. Housing.

VI. PERSONAL LIBERTY. FRANK TILLYARD, M.A., Barrister-at-Law.

1. Liberty of Speech.
2. Liberty of the Press.
3. The Right to Vote.
4. The Right to Combine.
5. What they are and how they have been acquired.

The above Committee have arranged for the following Courses of Lectures to be given in the University during the Session 1907-8 to Working Men on Tuesday evenings, at 8-15, commencing on Tuesday, November 5th.

- I. PIONEERS OF SCIENCE, OR THE GROWTH OF ASTRONOMY.  
The PRINCIPAL (SIR OLIVER LODGE).
  1. Copernicus, and the revolution in astronomical ideas.
  2. Tycho, and the beginnings of instrumental astronomy.
  3. Kepler, and the motion of the planets.
  4. Galileo. The telescope, and the foundation of Mechanics.
  5. Newton, and Mathematical Astronomy.
- II. THE EARTH. Professor J. H. POYNTING.
  1. The Shape and Size of the Earth.
  2. How the Earth is weighed.
  3. The Earth as a Clock; its rotation.
  4. The Atmosphere, Wind and Cloud.
  5. How the Earth is warmed.
- III. THE EARTH'S CRUST. Professor C. LAPWORTH.
  1. Volcanoes and Earthquakes.
  2. The Work of Rain and Rivers.
  3. The Geological Record.
  4. Our Coal and Coalfields.
- IV. BRASS (INCLUDING COPPER AND COPPER ALLOYS). Professor T. TURNER.
  1. History of Copper, Bronze, and Brass.
  2. Production, Properties, and Tests of Metals used for alloying with Copper.
  3. The arrangement of the Foundry.
  4. The Nature of Alloys.
  5. Alloys of Copper with other Metals.

Fee for the Session, 7/-, or 2/- for each of the above courses.

Attention is called to the following ordinary courses of University Lectures bearing on Social questions:—

- (a) BRITISH INSTITUTIONS. Professor MASTERMAN. (See page 366).
  - (b) ELEMENTARY PSYCHOLOGY, and LOGIC and the subjects generally mentioned in the PHILOSOPHY SECTION. Professor MUIRHEAD. (See pages 360 and 370).
  - (c) PUBLIC FINANCE. Professor ASHLEY. (See page 393).
  - (d) ELEMENTARY ECONOMICS (ECONOMIC ANALYSIS). Professor KIRKALDY. (See page 392).
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## FACULTY OF COMMERCE.

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The purpose of the Faculty of Commerce is to furnish a systematic training, extending over a period of three years\* for students who look forward to business careers. In planning the courses of instruction two objects have been kept in view—(1) the combination of liberal culture with utility; and (2) a due regard for the different requirements of different branches of commercial life. Certain parts of the curriculum are believed to be serviceable for all classes of business men, and are therefore prescribed for all students in the Faculty. In other parts a large freedom of choice is allowed, in accordance with the prospects, interests and aptitudes of individual students.

Two main alternatives are presented:—(1) Students who expect to be engaged in the *commercial* conduct of *manufacturing* and similar businesses will naturally desire to combine with the specifically commercial courses, and with a certain amount of linguistic study, some attention to the scientific and technical subjects which most nearly touch the business in which they are interested. Under the arrangement set forth in detail below, they can devote, if they so choose, about one-third of their time to work in Applied Science. And a similar choice will often be expedient for those who are likely to be concerned in the commercial management of collieries and other mines, or of agricultural undertakings, as well as for those who propose to enter upon business life in Australia, Canada, or S. Africa. (2) Students, on the other hand, who expect to be ultimately engaged in the work of a *merchant*, in the narrower sense of the word, will usually prefer (after due provision has been made for the strictly commercial courses) to enlarge their knowledge of foreign languages, and to gain access, in this and other ways, to a wider range of economic, financial,

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\* Two in the case of approved Graduates of other Universities. See p. 388.

and administrative studies. A like choice, with the necessary modifications in detail, may be appropriate for those who are likely to be occupied in railway or shipping management, in consular or municipal service, in the employment of Chambers of Commerce, or as accountants, or masters on the "modern sides" of schools. But in every case the choice among the several optional subjects will only be made after the student has had the opportunity of consultation with the Dean of the Faculty.

Students who have been matriculated in the University, and have acquitted themselves with credit in the requisite class work and examinations, will be admitted to the degree of Bachelor of Commerce. Students may matriculate on passing the Matriculation Examination of the University, or on producing evidence that they have passed one of the examinations which the University accepts in lieu thereof. A schedule of the exempting examinations is given in the Regulations for Matriculation.

Every candidate presenting himself at the Matriculation examination must pass in *five* subjects at one examination, viz. :—

- (1) English History and Literature.
- (2) Mathematics.
- (3) (4) and (5) Three subjects (of which one must be a language), chosen from the following list :—
  - (a) Latin.
  - (b) Greek.
  - (c) French.
  - (d) German.
  - (e) Italian.
  - (f) Spanish.
  - (g) Higher Mathematics.
  - (h) Experimental Mechanics.
  - (i) Chemistry.
  - (j) Geography.
  - (k) Botany.
  - (l) Animal Biology.
  - (m) Geometrical Drawing.

The requirements in the several subjects will be found in the Regulations for Matriculation.

But although a large freedom is allowed in the choice of subjects to be offered at the Matriculation Examination, those who look forward to entering the office of a merchant are *strongly recommended* to make at any rate a beginning with the study of two modern foreign languages while they are at school. They will do well to make such a beginning even though they should ultimately choose to offer one or both classical languages at the Matriculation Examination. If only one modern language can be studied, at school, German is recommended : the other languages included in the syllabus of the Faculty of Commerce are French, Spanish, and Italian.

Similarly, those who anticipate the career of a manufacturer, especially in the direction of Engineering, are urged to give special attention at school to mathematics.

It should be understood, however, that the best general preparation at school for the work of the Faculty of Commerce is a good all-round education. This should always include some practice in simple narrative and argumentative composition in English.

It is unwise for boys who desire a higher commercial education to leave school before they can pass an examination qualifying for Matriculation. And even after passing such examination, students may be too immature to benefit by a training which calls for the constant exercise of judgment. Accordingly, although no age limit will be set, and every case will be determined upon its merits, the Faculty of Commerce reserves the right of postponing the admission of students who appear insufficiently mature in mind and character to benefit by the instruction. Such students may be advised to spend a preliminary year in a workshop or counting-house. The same plan may properly be recommended in some cases to students who look forward to entering businesses in which early practical experience is desirable. It is, however, often

possible to get valuable practical experience in the office or workshop during the vacations.

All new students who propose to enter upon the curriculum leading to the degree of Bachelor of Commerce, are required to call upon the Dean of the Faculty at the University, on the morning of any day between September 25th and September 27th, or on September 30th, between 10 a.m. and 1 p.m., to inform him as to their previous training, and to consult him as to their choice of studies. Lectures will begin on Wednesday, October 2nd. Students unavoidably prevented from meeting the Dean at those times are requested to communicate with him by letter, on, or as soon as possible after, September 25th, to arrange an interview.

Students of the Second and Third Years are required to see the Dean on the morning of October 1st.

*Before any person will be permitted to register in the Office of the Secretary for any course under the Faculty of Commerce, he will be required to produce a card signed by the Dean, or by the teacher in charge of the particular course.*

The intention of this rule is to give every student an opportunity to obtain the advice of the teachers of the Faculty before committing himself by registration.

#### *Foreign Students.*

1. Foreign students, who propose to enter the University of Birmingham, are desired to communicate with the Dean of the Faculty of Commerce, and to furnish him with particulars as to their previous training, in time to receive an answer before it is necessary for them to leave their country.

2. Foreign students will be admitted to Matriculation without further examination on producing evidence satisfactory to the Registrar that they have attained in the schools of their own country a standard of general education substantially equivalent to that demanded

by the Matriculation Examination of the University of Birmingham.

3. Foreign students who are unable to satisfy the above requirement will be permitted to attend the lectures if they are qualified to benefit by them, without passing any examination at entrance. But if they desire to proceed ultimately to the Degree of B.Com., they must pass the Matriculation Examination. They will, however, be allowed, in suitable cases, to offer their native language in lieu of the prescribed English. Candidates who propose to offer other languages than French, German, Italian, and Spanish, at the July examination, are requested to communicate with the Registrar before May 1st; if at the September examination, before June 15th. They will still be required to satisfy the examiners in another language, and will be allowed to offer for that purpose any one of the following :—English, French, German, Spanish, Italian, Latin, Greek.

4. Foreign *graduate* students may, under suitable conditions, be admitted to the Degree of B.Com. within two years after their Matriculation. The Ordinance on this subject will be found below.

5. All foreign students are required to reside in Queen's College Hall of Residence, or in lodgings on the Secretary's list, and to give notice in the office of any change of address.

#### Curriculum for the Degree of B.Com.

Candidates for this degree are required to have attended the following courses of study, and to have passed the University Examinations thereon at the end of each of the three years. There will be a *vivā voce* examination in foreign languages in each year; and also in such other subjects as the Examiners may determine. Candidates may offer themselves for the whole or any part of the Examination in any year. Only matriculated students will be admitted to University Examinations (in which External Examiners co-operate with the University staff). The class examinations, to which non-matricu-

lated students will be admitted, will be conducted by the University staff alone. The scope of the several courses will be learnt from the syllabuses which follow the curriculum ; and (in the case of courses in Languages, History, Mathematics, Science—Pure and Applied, and Philosophy) from those in the announcements of the Faculties of Arts and Science.

*FIRST YEAR.*

1. Commerce I.
2. Accounting I.
3. Economic Analysis.
4. The Commerce Seminar.
5. A Modern Language (German, Spanish, French, Italian, or, —in the case of foreign students,— English).
6. A Science applicable to Manufacture  
*Or*  
A second Modern Foreign Language.
7. An approved Course selected from any of the Departments under the charge of the Faculties of Science or Arts.

*SECOND YEAR.*

1. Commerce II.
2. Accounting II.
3. Economics of Transport.
4. The Commerce Seminar.
5. A Modern Foreign Language.
6. A Science applicable to Manufacture  
*Or*  
A second Modern Foreign Language.
7. An approved Course selected from any of the Departments under the charge of the Faculties of Science or Arts.

**Regulations as to First and Second Year Courses.**

*Commercial Courses Proper.*—For these see the syllabuses below.

*Languages.*—Every candidate for the Degree of B.Com. must attend, in accordance with Requirement 5 in the above lists, three full courses in one modern Foreign Language, one in each of the years of the curriculum. The minimum requirement for the degree in the language selected is the passing of the Matriculation and Intermediate Arts Examination, as well as of the examination in Commercial Literature and Correspondence. The higher standard reached by those students who are also able to pass the language examination of the Second Year in Arts will be recorded in the class-list.

Besides this, every candidate for the degree will be allowed, under Requirement 6 above (and Requirement 9 in the third year), to choose between a Course in Science appropriate to a business career, and a Course in a second Foreign Language. If he is especially interested in the language or literature of either of the two foreign countries he may, if he so choose, take a further advanced course under Requirement 7 in the first and second years.

*Pure and Applied Sciences.*—The intention of the choice here allowed is to enable a student, if he so desires, to give a considerable proportion of his time to the scientific study which is likely to be of service to him subsequently. A student who wishes to become a technical *expert* will enter the Faculty of Science: the opportunities afforded in the Faculty of Commerce are only such as are desirable for one who will be engaged mainly in the *commercial* management of a business. Such a student may, under Requirement 6 in the first and second years (and Requirement 9 in the third year), take one of the courses rendered available by the time table in any scientific subject definitely associated with manufacture. This course must, as a rule, consist of at least three hours of lectures per week, or their equivalent in laboratory or workshop hours; two laboratory or workshop hours being reckoned for this purpose equivalent to one lecture hour. He may, under Requirement 7 in the first and second years, take an additional

scientific course, such as may be suitable in conjunction with the other in the judgment of the Dean ; this course also to consist of not less than three hours of lectures a week or their equivalent. When both these choices are made, the total number of hours required, viz., six, may be divided between two courses in such a way as may be most advantageous or convenient. If more lectures in the Faculty of Science are taken than seven a week in the first and second years, and four in the third year, an addition will be made to the composition fee.

Any course, however, under the Faculty of Science may be taken to satisfy Requirement 7 of the first and second years, without any purpose of business utility, and simply as an element in a general education, *if* the other requirements of the curriculum are at the same time satisfied.

*Courses under the Faculty of Arts.*—Under Requirement 7 in the first and second years there is complete freedom of choice among courses rendered available by the time table, subject only to the condition that the number of lectures a week must not, as a rule, be less than three. In suitable cases two shorter courses may be taken instead of a longer one.

But every student is asked to consult with the Dean before making his choice, and he is urged to make a selection only after a careful consideration of his intellectual interests. Unless he has a valid reason for some other choice he is *strongly recommended* to take in the first year the course on *British Institutions*, and in the second year that on *European History since 1789*; while in many cases a course in *English Literature* will also be very advisable.

#### THIRD YEAR.

1. Commerce III.
2. Accounting III.
3. Technique of Trade, including Banking and Exchange.

4. Public Finance.
5. Methods of Statistics.
6. Commercial Law.
7. The Commerce Seminar.
8. A Modern Foreign Language
9. A Science applicable to Manufacture

*Or*

A second Modern Foreign Language.

#### Regulations as to Third Year Courses.

*Commercial Courses Proper.*—For these see the syllabuses below.

*Languages.*—The work in this year will deal with Commercial Literature and Correspondence. The object of this course will be not only to give facility in the conduct of correspondence, but also, by accustoming the student to the perusal of typical examples of foreign commercial, financial, statistical, and industrial literature, to enable him to keep abreast for the future with important economic developments in other countries.

Students will be allowed to select the course in Commercial Literature and Correspondence only in those languages in which they have reached the proficiency demanded at the Intermediate Examination.

*Pure and Applied Sciences.*—See the regulations of the First and Second Years.

#### Admission of Graduates from other Universities.

Graduates, or persons who have passed degree examinations of other Universities or institutions of University rank, who present evidence satisfactory to the Faculty of Commerce that they are qualified to pursue a special course of study prescribed by the Faculty, are allowed to matriculate and enter the University and to become candidates for the Degree of B.Com. after *two* years of regular study or research, provided that they satisfy the Faculty at the end of their first year that their work is of sufficiently high quality.

### Fees.

The Composition Fee for the whole curriculum of instruction is £21 for the first year, and £24 3s. for the second and third years. This includes the Membership Fee of £1 1s. Graduate Students proceeding to the Degree of B.Com. in two years pay the fees of the second and third years.

The other fees during the course of the three years are as follows :—

	£	s.	d.
Matriculation ... ... ... ...	2	0	0
Matriculation by virtue of any of the examinations accepted in lieu of the Matriculation Examination of this University ... ... ...	1	0	0
First Examination ... ... ...	2	0	0
Second Examination ... ... ...	2	0	0
Third Examination ... ... ...	2	0	0
Admission to B.Com. Degree ... ...	2	0	0

### Non-Matriculated Students.

Each of the classes in the Faculty of Commerce is open to all persons who are capable of taking advantage of the instruction offered, whether they have matriculated or not ; and pass-certificates will be granted to non-matriculated students at the end of each session on the results of the class examinations.

The conditions of admission in the case of non-matriculated students are identical with those for similar students in the Faculties of Science and Arts. They include Registration in the Secretary's office, the payment of a variable Membership Fee (*e.g.*, for a single course running through the whole session, 10s. 6d.), and the payment of Fees for the particular courses selected (given below with the several syllabuses).

But although only students who have been matriculated can, as a rule, become candidates for the degree of

Bachelor of Commerce, the Senate has power to recognise the attendance of non-matriculated students at courses of study as part of the qualification for a degree.

#### HOURS OF LECTURES.

*The hours assigned in the following syllabuses to the several courses are altogether provisional. Owing to the wide range of choice allowed in the requirements for the degree of B.Com., it will often be impossible definitely to arrange the hours before the beginning of term.*

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#### Syllabuses of Courses.

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#### COMMERCE AND FINANCE.

*Professor of Commerce : W. J. ASHLEY, M.Com. ; M.A. (Oxon.), late Fellow of Lincoln College, Oxford.*

*Professor of Finance : A. W. KIRKALDY, M.Com. ; M.A., B.Litt. (Oxon.).*

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#### COMMERCE.

##### COURSE I.—FIRST YEAR.

###### PROFESSOR ASHLEY.

The Industrial and Commercial Organization and Resources of the British Empire ; with particular regard to the great self-governing colonies and to India.

Tuesdays and Thursdays, at 9.30.

FEE : £4 4s.

*COURSE II. SECOND YEAR.*

PROFESSOR KIRKALDY.

The Industrial and Commercial Organisation and Resources of the United States, Germany, Russia, France, Italy, South America, &c.

Mondays and Fridays, at 2.30.

FEE : £4 4s.

The two foregoing courses will set forth the modern development and the structure and position of industry and trade to-day in the leading countries of the world. This will involve a consideration of geographical position and natural resources on the one side, and, on the other side, of the recent economic history, of the present supply and organisation of capital and labour, and of the state of the mechanical arts.

Commercial History and Commercial Geography will be largely introduced ; but they will be treated in relation to one another, and in close connection with the consideration of underlying economic causes.

*COURSE III. THIRD YEAR.*

PROFESSOR ASHLEY.

Business Policy, in its main principles, as indicated by industrial and commercial experience.

Mondays and Wednesdays, at 11.30.

FEE : £5 5s.

The course will deal with such topics as the following : The Location and Laying-out of Works and Offices ; Capitalisation ; Production on Large and Small Scale ; Differentiation and Consolidation of Manufactures : Combinations of Manufacturers or Merchants ; Limited Companies, Private and Public,—their Advantages and Disadvantages ; Factoring and Manufacturing ; Machinery—its Financial and Industrial Consequences ; Works Management ; Relations of Employers and

Employed, Methods of Remuneration, Hours of Labour ; Choice of Markets ; Market Fluctuations and their Interpretation ; Advertisement ; Negotiation ; Relation of Selling Price to Cost ; Fixed Charges ; Methods of Sale and Purchase ; Credit ; Goodwill ; and Trade Cycles.

### Economic Analysis.

*FIRST YEAR.*

PROFESSOR KIRKALDY.

Wednesdays, at 11.30.

FEE : £1 11s. 6d.

This course will take a rapid survey of the whole of the wealth-producing and wealth-distributing activity of society. It will seek to disentangle the larger forces at work, to direct attention to the complex relations of cause and effect, and to indicate the general causes and criteria of national prosperity. It will deal systematically with most of the general topics usually treated of in the text books of Political Economy, including the functions of money and credit. It will thus supplement the courses on Commerce by (1) emphasizing the general considerations only incidentally touched upon therein, and (2) connecting commerce with other sides of national life.

### Economics of Transport.

*SECOND YEAR.*

PROFESSOR KIRKALDY.

Wednesdays, at 12.30.

FEE :—£1 11s. 6d.

The course will give an outline survey of the various means of transportation, with a more particular treatment of railways—their development and organisation. The forces influencing railway rates will be considered ; and the attempts of various governments to control or manage railways will be explained and criticised. Some attention

will also be given to ocean freights ; as well as to canals and other means of internal communication.

**Public Finance.**

*THIRD YEAR.*

**PROFESSOR ASHLEY.**

Thursdays, at 11.30.

**FEE : £1 11s. 6d.**

This course will treat of Public Expenditure, Public Revenue and Public Credit, as illustrated especially in the national, county, and municipal experience of Great Britain. It will discuss the principles and methods of Taxation, and the methods of contracting and extinguishing Debt ; and it will include a comparison with foreign systems of raising revenue.

Students will examine the last British Budget, and will read a number of the more important Budget speeches of recent decades.

The course is recommended to students who propose to enter, or are already engaged in, municipal or banking service.

**Technique of Trade.**

(INCLUDING BANKING AND EXCHANGE).

*THIRD YEAR.*

**PROFESSOR KIRKALDY.**

Tuesdays and Fridays, at 12.30.

**FEE : £4 4s.**

This course will deal with the organization of the great staple markets and commercial institutions at home and abroad, the chief technical terms, and the most important mercantile documents. It will include an account of the English Banking System as compared with those of the United States and Germany ; and it will explain the mechanism of the Money Market and of Foreign Exchange.

**Statistics.***THIRD YEAR.***PROFESSOR ASHLEY.**

Fridays, at 11.30, during the Winter and Spring Terms.

**FEE : £1 1s.**

This course is intended to serve as an exposition of the statistical methods most commonly employed rather than as a description of mere results. The chief governmental statistics of Great Britain dealing with trade and manufactures will be examined ; and an attempt will be made to indicate, after a consideration of the mechanism for securing information employed in each case, the extent to which the results are of value, and the way in which they might be rendered more serviceable.

**The Commerce Seminar.****PROFESSORS ASHLEY AND KIRKALDY.**

THROUGHOUT THE THREE YEARS ; Saturdays, 9.30 to 11.30.

**FEE : £4 4s.**

The purpose of the Seminar is to train students in independent investigation and reasoning ; and the attendance of all candidates for the degree of B.Com. is compulsory. A subject is assigned some weeks beforehand to each member of the Seminar. He consults the literature of the subject and makes such inquiries as the Professor may suggest ; and then prepares a paper, which is read in the Seminar, and there discussed and criticised. Incidentally an effort is made to give the members of the Seminar some practice in the art of clear and vigorous exposition and to accustom them to the preparation of terse and business-like reports.

**ACCOUNTING.****PROFESSOR SIDNEY S. DAWSON, F.C.A.***COURSE I. FIRST YEAR.*

Thursdays, at 12.30.

FEE : £1 11s. 6d.

This course provides systematic instruction in the elements of book-keeping both by Double and Single Entry ; but, like the more advanced courses, it aims at providing the students with a sound knowledge of the science of accounting, rather than at training them in the craft of keeping books. The course comprises a description of all the usual subsidiary books, dealing separately with non-trading, trading, and manufacturing concerns ; the posting of the Ledger or Ledgers ; the extraction of the Trial Balance ; and the preparation therefrom of the periodical Balance Sheet, and of Trading and Profit and Loss Accounts. The distinction between Capital and Revenue, between Fixed and Floating Assets, and the nature and limitations of Accounts generally will also be fully dealt with.

*COURSE I. A.*

The Professor of Mathematics (Dr. Heath) will, from time to time, give during the Winter Term a short course of lectures on the Theory of Compound Interest, Annuities and Sinking Funds, together with an explanation of the construction and use of Interest, Annuity, Life and Sinking Fund Tables. Opportunity will also be taken in connexion with this course to give some training in rapid arithmetical methods. The course is recommended for Accountants, Surveyors and Actuaries, but is not obligatory on students in the Faculty of Commerce.

Students who propose to take this course are desired to inform the Dean on or before September 28th.

FEE : 10s. 6d.

## COURSE II.—SECOND YEAR.

SECTION A, Thursdays at 4.30.

FEE : £1 11s. 6d.

This course deals with the more advanced problems arising on the application of the principles of Accounting to practical business, and includes *inter alia* an explanation of the following matters :—The Sectional Balancing of Ledgers in a large undertaking ; the formation of Periodical Accounts ; the general Organisation of Accounts ; and Systems of Internal Check designed to avoid errors in balancing and fraud. The nature and scope of staff and professional audits will also be considered.

The course further comprises a survey of the chief matters of importance in connection with Company Accounts, with special reference to the problems arising in connection with new companies, the general principles underlying assessment for Income Tax, and the preparation of Accounts for Income Tax Returns and Appeals, and for claims for the return of Income Tax overpaid. It embraces also an explanation of the salient features in connexion with executorship Accounts, and of Accounts arising from the insolvencies of individuals and of Companies, as well as in connection with the reconstruction of Companies. These latter questions will be discussed from the point of view of the Creditors. The principal difficulties arising in connection with Partnership Accounts, and the most fruitful causes of dispute between partners will also be considered.

Special attention will be given during this course to the Double-Account System, and to the various methods in use for provision against the Depreciation of Plant, Machinery and other Wasting Assets. Card and Loose-leaf Ledgers will be dealt with, together with other labour-saving devices of recent introduction.

Students may be exempted, with the consent of the Dean of the Faculty from such parts of this course as

are too special or technical for their individual requirements ; and a choice of questions will be allowed in the examination.

SECTION B, Thursdays at 11.30.

FEE : £1 11s. 6d.

This course will be utilised to some extent to deal at greater length with some of the more important subjects comprised in Section A ; and it is especially designed to meet the requirements of those students who, for want of practical experience, may find it difficult to follow the course of instruction there given. In addition, however, attention will be directed to the higher purposes of Accounting,—to giving students a grasp of the principles which will enable them to comprehend the significance of accounts and to understand the various processes by which business results are computed. Special attention will be given to such questions as Reserves, Reserve Funds, Sinking Funds, Profits, Goodwill, and the like. Periodical Returns will also be discussed with the object of making students familiar with their value not merely for the purposes of periodical Balance Sheets, but also for providing that prompt information which is essential for the due success of business undertakings.

*COURSE III. THIRD YEAR.*

Thursdays, at 3.30.

FEE : £4 4s.

The course will begin with a discussion of Statistical Accounts and of Head Office and Branch Accounts, and a consideration of systems for centralising the book-keeping of branches.

But it will be mainly devoted to a consideration of Departmental Book-keeping and Accounts, Stock and Stores Accounts, and advanced Costing and Cost Accounts, suitable for various undertakings.

Attention will be called to the several possible systems

of Costing, and the merit and weaknesses of each ; the several circumstances to be borne in mind in various typical businesses when constructing a system ; and the necessary limitations of Cost Accounts.

A number of representative published Balance Sheets will be studied, and students will be instructed in their interpretation.

The course will also include an outline of the distinctive features of the accounts of different classes of undertakings connected with the various leading industries, while the special characteristics which mark the accounts of Local Authorities and other public undertakings will also be included.

Accounting for Engineering Students.  
Fridays, at 9.30.

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### COMMERCIAL LAW.

THIRD YEAR.

*Lecturer :* FRANK TILLYARD, M.A. (Oxon.),  
Barrister-at-Law.

Tuesdays and Thursdays, at 2.30.

FEE : £2 12s. 6d.

The first term's course consists of general introductory lectures on the elements of (*a*) the law of persons, including agency, partnership, and incorporated trading companies, (*b*) the law as to bank notes, cheques, Bills of Exchange, and other negotiable instruments, and (*c*) the Law of Contracts.

In subsequent terms the Partnership Act, the Bills of Exchange Act, and the Sales of Goods Act are studied in detail. In the second term there is a short separate course on Bankruptcy and Company Winding-up.

The law of carriage of goods, and the relations of Master and Workman are also dealt with.

## UNIVERSITY EXTENSION LECTURES.

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### *Committee.*

Professor ALFRED HUGHES, M.A., *Chairman.*

THE PRINCIPAL.

THE VICE-PRINCIPAL.

Professor W. J. ASHLEY, M.A., M.Com.

Professor J. CHURTON COLLINS, M.A., D.Litt.

Professor A. BOSTOCK HILL, M.D., M.Sc., D.P.H.

Professor W. HILLHOUSE, M.A., M.Sc., F.L.S.

Professor C. LAPWORTH, LL.D., M.Sc., F.R.S.

Professor J. H. MUIRHEAD, M.A., LL.D.

Professor R. A. S. REDMAYNE, M.Sc., F.G.S.

Professor T. TURNER, M.Sc., A.R.S.M.

Professor J. H. B. MASTERMAN, M.A.

Professor A. W. KIRKALDY, M.Com. : M.A., B.Litt.,  
*Secretary.*

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### REGULATIONS.

**1. AREA AND SUBJECTS.**—Courses of Lectures on Literature, History, Economics, Law, Languages, Education, Physics, Chemistry, Zoology, Botany, Metallurgy, Mining, Geology, Art, Music, and Architecture, are available for evening delivery within a reasonable distance from Birmingham, *i.e.*, in centres from which return to Birmingham on the same night after the Lecture is possible. In some cases the Lecturer may be available for afternoon Lectures, or for evening Lectures at such a distance as to involve return next morning.

**2. BUSINESS CONDITIONS.**—In making arrangements for the provision of a Course of Lectures the following conditions must be complied with :—

- (a) Arrangements can only be made with the duly authorised Secretary of a Local Committee, specially formed for this or some cognate purpose, or with the Executive of some Public Authority or Institution.
- (b) This Committee or Public Body must guarantee the Lecture Fee, together with the other expenses referred to hereafter.
- (c) A suitable Lecture Room must be provided, together with any appliances which may be needed for the illustration of the Lectures, other than those brought by the Lecturer; e.g., blackboard, means for suspending diagrams, tables for apparatus, lantern, etc.; and the expenses defrayed locally.

3. LECTURES.—A course usually consists of ten or twelve lectures, and can be delivered at any convenient time either before or after Christmas.

4. TEACHING METHOD.—Each lecture lasts for about an hour, and is preceded or followed by a class, which is open to all who have taken tickets for the Course. The method of the class is conversational. It is specially intended for the assistance of the more systematic students, bringing the Lecturer into personal relations with them, so that he may be able to clear away any difficulties they may have felt, to enter more fully into matters which appear to require amplification, or to advise them as to their further study. As a rule one or two questions for home answering are set at the close of each lecture, and bearing upon its subject. The answers will be examined by the lecturer, and discussed in the class. Up to a maximum number of twenty-five the reading of these home papers is included in the lecture fee; above that number a small fee is charged *per capita*. The lecturer can also be asked questions in writing, and will answer them in class.

5. SYLLABUS.—A syllabus of each course of lectures, showing the scope and method of treatment, will be issued prior to the commencement of the course, and the lecturer will indicate therein the books or portions of books which he considers it desirable that the students should read.

6. EXAMINATION.—Where desired, a written examination will be held at the conclusion of a course by a specially-appointed examiner; a pass-list will be issued, the names of those who have passed with special credit being duly distinguished; and, for courses of not less than ten lectures, certificates will be awarded, on the combined results of the weekly papers and the final Examination. The examiner will also be prepared to adjudicate upon any prize which may be offered in connection with a course. The Committee of Senate of the University will be prepared to report upon or award any Scholarship or Exhibition which may be offered in connection with a course or system of courses.

7. COST.—The cost of a course of lectures is made up of the following items :—

- (a) A lecture fee, which includes travelling expenses, examination fee, and cost of syllabus, viz :—  
For a course of six lectures, £26 5s., eight lectures, £32 10s. od., ten lectures, £40, twelve lectures, £45. Certain lecturers rank as “Junior Lecturers,” and in their case the fee is subject to a reduction of one-fifth. For distances beyond a certain maximum, or when the lecturer is required to stay the night, and private hospitality is not provided, a small *pro rata* addition will be made to these fees. For courses longer than twelve lectures, or for two immediately consecutive courses upon the same subject, special terms will be arranged. For conjoint courses a slightly higher fee is charged.

- (b) The cost of the carriage of any apparatus for illustrating the lectures, a small sum for the use of apparatus, and excess charges upon home papers, if any.
- (c) Local expenses, consisting of advertising, hire and lighting of hall, attendance, provision of lantern, etc.

The Secretary will be glad to confer with local secretaries as to proposed courses ; or, free of cost, to visit local centres for the purpose of advice or consultation, or for the arrangement of courses or systems of courses, with special application to local needs.

All communications should be addressed to  
PROFESSOR KIRKALDY,  
Birmingham University Extension,  
THE UNIVERSITY,  
BIRMINGHAM.

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## EXHIBITIONS AND SCHOLARSHIPS.

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### Entrance Exhibitions.

Two Entrance Exhibitions, not exceeding in value the sum of £25 each, will be awarded on the results of the Matriculation Examination in July, 1908, or Intermediate Science and Arts Examinations in June, 1908, provided that a proper standard is reached by the candidates. Candidates for the Exhibitions must be under the age of nineteen years on the first day of the examination. The Exhibitions will be tenable at the University during the Session immediately following the Examination, provided that the exhibitioner becomes a matriculated student of the University and attends courses leading to a degree, and will be paid solely in the form of remission of class fees.

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### Theodore Mander Scholarship.

A fund raised by private subscription organised by the Citizens of Wolverhampton to establish a memorial of the late Mr. Samuel Theodore Mander, Mayor of Wolverhampton, has been devoted to the foundation of a Theodore Mander Scholarship. The Scholarship, of the value of about £24 per annum, is open to sons and daughters of burgesses of Wolverhampton, and is tenable at the University of Birmingham. The Scholarship is awarded upon the results of the Matriculation Examination in July, or Intermediate Science and Arts Examination in June in each year, and preference will be given to candidates desirous of attending courses in connexion with or preparatory to Degrees in Science or Commerce. The Scholarship is tenable for two or three years, according to the length of time necessary to obtain a degree.

in the Faculty chosen. Forms of entry may be obtained from the Registrar of the University, and should be returned duly filled up on or before the first Monday in May.

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#### Polytechnic Bursaries.

Two Bursaries, of the approximate value of £45 each for three years, will be awarded on the result of the Matriculation or Intermediate Examination in June, 1909, to candidates who have for a period of five years resided in the city of Birmingham or any of the following parishes, viz., Yardley, Castle Bromwich, Erdington, Aston Manor, Handsworth, Smethwick, Halesowen, Northfield, King's Norton, and the incomes of whose parents (if alive) do not together exceed the sum of £150 per annum, or who, if their parents or either of them be deceased, are in receipt of an income of not more than 15s. a week. Candidates are required to satisfy the Standing Committee appointed by the Founders that they belong to the class of persons for whom the Scholarships were intended. Forms of application may be obtained from Mr. J. E. Berry, Secretary of the Birmingham Trades Council, 260, Albert Road, Aston, Birmingham, and must be returned to him on or before the first Monday in May.

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#### Jabez Lones Bursary.

The income from a fund raised as a memorial to the late Alderman Jabez Lones, of Smethwick, is devoted to the provision of a Bursary which shall be tenable at the University by persons who have been resident in Smethwick for at least twelve months, and have been students in the Smethwick Technical School for at least one session. In the first instance, the Bursary is awarded for one year,

but may be renewed for two further years provided that the work and progress of the student holding the Bursary are satisfactory. The bursary is awarded by the University on the results of the Matriculation or Intermediate Examination, subject to confirmation by the Smethwick Town Council.

The annual value of the Bursary is about £11.

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#### Heslop Memorial Scholarship.

A Scholarship of the annual value of about £25, in commemoration of the long and valuable services rendered to the city of Birmingham by the late Dr. Heslop, was founded in 1885, by private subscription. The Scholarship is open to all candidates who have been pupils in any of the schools on the foundation of King Edward VI. in Birmingham for not less than two years immediately preceding the award of the Scholarship. The Scholarship is awarded by the University in alternate years on the results of the Intermediate Examinations in Science and Arts, and is tenable for two years at the University. The next award will be made in June, 1909. The Scholarship is paid solely in the form of remission of fees.

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#### The Ascough Scholarship.

A Scholarship of the value of about £36, founded by the daughters of the late Mr. Jesse Ascough, in memory of their father, will be awarded to the candidate who is most distinguished in Chemistry at the Intermediate Science Examination held in June. Candidates may take the part of the Examination which relates to Chemistry for the purpose of competing for the Scholarship, without taking the whole of the Intermediate Examination. The Scholarship is tenable for one year, but may be renewed for a second and third year at the discretion of the Faculty of Science. The Scholarship will be paid in

three terminal instalments, and it shall be competent for the Faculty at any time to withhold further payments if the conduct, diligence, or progress of the scholar is regarded as unsatisfactory. Forms of entry may be obtained from the Registrar of the University, and should be received duly filled up on or before the first Monday in May.

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#### The Wiggin Metallurgical Scholarship.

A Wiggin Metallurgical Scholarship (founded by Messrs. Henry Wiggin and Co.) of the value of about £37 10s. per annum, tenable for two years, will be awarded annually to the candidate who does best at the June Intermediate Science Examination (Pure or Applied Science) if there is a candidate of sufficient merit. Such a Wiggin Metallurgical scholar is required to proceed to the degree in Metallurgy.

If there is no candidate of sufficient merit, there will be a special examination (including Metallurgy) held in September, open to members and non-members of the University. The successful candidate shall pursue a course of study for two years under the direction of the Professor of Metallurgy.

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#### George Henry Marshall Scholarship.

The George Henry Marshall Scholarship in Classics, of the value of £40 per annum, tenable for three years, is awarded on the results of the Intermediate Arts examination, the following subjects being taken:—(1) Latin, (2) Greek, (3) A Modern Language, (4) English Language, Literature and History, and (5) *either* Mathematics or Logic, supplemented by such papers in Greek and Latin as the Faculty may from time to time decide.

### Education Committee Scholarships.

The University annually awards free Scholarships to the Students entering the University as holders of Scholarships given by the Birmingham Education Committee, by remitting all fees for instruction.

The Scholarships are tenable at the University for *three* years, and at King Edward's School or the Technical School for such preceding period as may be necessary to fit the scholars to enter the University. The Scholars must obtain from the Vice-Principal a written approval of the course of study they intend to pursue. The continuance of the Scholarships is at all times subject to satisfactory reports as to the fulfilment of the conditions under which they are held.

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### Annie Deakin Prize.

The "Annie Deakin Prize," founded in memory of the late Miss Annie Deakin, of Handsworth, by friends and former pupils of her School, of the value of about £1 5s., is awarded annually to the woman who passes the July Matriculation Examination with the highest distinction among those candidates who declare their intention of becoming teachers in Secondary Schools.

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### University Exhibitions.

Two exhibitions, not exceeding in value the sum of £30, tenable for one year, are awarded on the results of the Intermediate Examinations in Science and Arts on the nomination of the Faculties concerned. The exhibitions are tenable during the University Session immediately following the examinations, and will be paid solely in the form of remission of class fees.

The exhibition in the Faculty of Science may be renewed for a second year upon receipt of reports of satisfactory progress. An exhibition held by a student in Engineering may be renewed for a third year, on the recommendation of the Faculty of Science.

In the Faculty of Arts, an exhibition tenable during the student's third year will be awarded on the result of the Second Year Arts Examination.

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#### Special Exhibitions in the Faculty of Arts.

Two University Exhibitions not exceeding in value the sum of £30 tenable for one year are awarded to students in the specialised Schools of the Faculty of Arts. One of these exhibitions is awarded on the results of the first year's examination, and the other on the results of the second year's examination in the various specialised schools. The exhibitions are tenable during the University Session immediately following these examinations, and are paid solely in the form of remission of fees.

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#### University Scholarships.

Four University Scholarships of the value of £50 a year, tenable for one year after graduation, may be awarded on the nomination of the Faculties of Science and Arts. These scholarships will carry with them free admission to lectures and laboratories in preparation for the Master's Degree.

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#### Research Scholarships.

In addition to the Priestley and Bowen Research Scholarships, about four Research Scholarships of the value of £50 a year, tenable for one year, may be awarded on the nomination of the Faculties of Science and Arts. The Scholarships will carry with them free admission to the Library and Laboratories of the University for the purposes of research. They will be held subject to the progress and good conduct of the holders, at the discretion of the Faculty concerned.

*Applications should be sent to the Registrar on or before the 1st of June.*

**Bowen Scholarships in Engineering.**

(*Founded by the late T. Aubrey Bowen, of Melbourne.*)

Two Scholarships of the value of about £96 each, tenable for one year (except as hereafter mentioned), are awarded annually.

The objects of these scholarships are to encourage research in the scientific portions of engineering. The scholarships will be held under the condition that the holder devotes his whole time to research as a student in the University of Birmingham.

Candidates must have spent three years in the Engineering Department of a University College ; preference will be given to candidates who hold an Engineering degree.

In each year two scholarships will be offered, tenable for one year, but in special cases where the scholar has shown considerable capacity for research work, the scholarship may be extended for a further year. The scholarships will be paid in three instalments, and in the event of a scholar's attendance, diligence, or progress being at any time unsatisfactory, the subsequent instalments may be withheld.

The University Fee payable by Bowen Scholars will be £30 for the year, payable in three sums of £10 each, this sum to include the use of the ordinary apparatus and materials, as well as the purchase of such special apparatus and materials as the Professor shall consider desirable.

*Applications, supported by details of educational training and references to former teachers and others, should be sent to the Registrar on or before the 1st of June.*

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**Priestley Scholarships in Chemistry.**

(*Founded by the late T. Aubrey Bowen, of Melbourne.*)

Three Scholarships of the value of about £96 each, tenable for one year (except as hereafter mentioned), are awarded annually.

The object of these scholarships is to encourage and afford greater facilities for the higher study of chemical science at the University. As far as possible this higher study will take the form of original experimental or theoretical investigation in some branch of Chemistry, pure or applied, to be carried on in the Laboratories of the University, under the direction of the Professor of Chemistry.

In the selection of candidates for these scholarships, preference will naturally be given to present or past students of the University, although outside candidates bearing the necessary credentials will also be eligible. As a general rule only such candidates as have passed through an approved three years' course of study in chemistry and the allied sciences will be accepted.

Under ordinary circumstances the scholarships will be tenable for one year, but the power is reserved of re-nominating for a second or third year in the event of such a course being considered desirable as tending to promote the object which the foundation of these scholarships has in view.

Priestley Scholars will be regarded as ordinary students of the University, and must conform to all the general rules of the University as well as to the special ordinances of the Chemical Department. The scholarships will be paid in three instalments, and in the event of a scholar's attendance, diligence, or progress being at any time unsatisfactory, the subsequent instalments may be withheld.

The University Fee payable by Priestley Scholars will be £30 for the year, payable in three sums of £10 each, this sum to include the use of the ordinary apparatus and chemicals, as well as the purchase of such special apparatus and chemicals as the Professor shall consider desirable.

At the close of his year's tenure of the scholarship, or at any time previous thereto that the Professor may think fit, a scholar shall present the results of his work in the

form of a thesis, the arrangements for the publication of which shall be left to the discretion of the University authorities.

*Applications, supported by details of educational training and references to former teachers and others, should be sent to the Registrar on or before the 1st of June.*

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### Bowen Scholarship in Metallurgy.

(*Founded by the late T. Aubrey Bowen, of Melbourne.*)

A Scholarship of the value of about £96, tenable for one year, is awarded annually.

This scholarship will be held on precisely similar terms to those laid down above for chemistry, the work engaged on by the scholar having a direct or theoretical bearing on some department of metallurgy. As the prosecution of this work may from time to time entail the visiting of works for the purpose either of personal observation or actual experiment, the Professor will be empowered to authorise the expense of such visits being either wholly or in part defrayed out of the above-mentioned fee paid by the scholar.

*Applications, supported by details of educational training and references to former teachers and others, should be sent to the Registrar on or before the 1st of June.*

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### William Cooke and Company Scholarship.

#### REGULATIONS.

1. This Scholarship of the annual value of £21 has been presented to the University by Messrs. William Cooke and Co., Ltd., the Tinsley Steel, Iron and Wire Rope Works, Sheffield.
2. The Scholarship will be awarded on the result of a biennial examination, the details of which are given below.
3. The Scholarship will be awarded only to students who intend taking the Mining Diploma, and is tenable for two years.

4. Those eligible for the Scholarship are :
  - (a) Mining students articled to Mining Engineers, Colliery Managers, or Colliery Proprietors, whose mines or offices are situated within the area which is educationally under the control of the University of Birmingham.
  - (b) Other persons actually employed underground or who have been so employed for a period exceeding three years at a Colliery in the area mentioned in Section 4 (a), provided that in both cases the applicant has attained the age of 18 years, and that he intends as soon as he is properly qualified to present himself for the Colliery Manager's First Class Certificate of Competency to manage a mine.
5. Regular attendance at lectures and classes and examinations is compulsory.

6. The scholarship may be withdrawn at any time on account of irregular attendance, failure to pass examinations, or bad behaviour.

#### EXAMINATION.

1. The next examination will be held in June, 1908, and candidates must apply to the Registrar for a form of entry which must be returned on or before May 1st, accompanied by a certificate of good character from the last school attended, or from some responsible person, and by a fee of £1.

2. The examination will be conducted partly by means of printed papers and partly by means of a *viva voce* examination.

3. The subjects in which candidates will be examined are :—

- (1) English History and Literature (History of the English People from 1066. English Composition).

- (2) Mathematics (Arithmetic, Elementary Algebra, Geometry).
  - (3) Experimental Mechanics (Statics Hydrostatics, Dynamics), or Chemistry (Elementary Inorganic).
  - (4) Elements of Coal Mining.
  - (5) Geology (Elementary, Physical, and Palaeontological).
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### The Corbett Scholarship.

*(Founded by the late John Corbett, of Impney, Droitwich.)*

The Corbett Scholarship, of the value of about £28 a year, payable in the form of remission of fees, is tenable for one year, and is awarded to the student who is recommended to the Senate as the most promising and distinguished student in Mathematics at the end of his or her second year after registration.

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### Science Research Scholarship.

*Awarded by the Royal Commissioners for the Exhibition of 1851.*

The Royal Commissioners for the Exhibition of 1851 annually place at the disposal of the University the nomination to a Science Scholarship of the value of £150 a year, tenable for two years, the continuation for the second year being dependent on the work done in the first year being satisfactory to the Scientific Committee appointed by the Commissioners. The student nominated must have studied in the University for three years at least, and must undertake to devote himself to scientific research or the application of scientific knowledge to industries. The Scholarship may be held at any University at home or abroad, or in some other properly-equipped institution to be approved of by the Commissioners. The nomination of candidates by the

University is subject to revision by the Commissioners, and the privilege of nomination may be withheld by them at any time.

*Applications should be made to the Registrar on or before the 1st of January.*

#### Government Aid towards the Instruction of Science Teachers.

In accordance with a minute adopted by the Right Honourable the Lords of the Committee of Her Majesty's Most Honourable Privy Council on Education, June, 1881 (Science Form, No. 1,126), their Lordships are prepared to pay three-fourths of the fees for courses of laboratory instruction, as stated below, for a limited number of Teachers engaged in Science Teaching, on condition that satisfactory reports of their progress (to be ascertained by examination), and of their conduct, be received at the end of the Winter, Spring, and Summer Terms.

Applications for this privilege must be made to the Secretary, Board of Education, South Kensington, London, S.W., not later than the 31st August.

The selection of the applicants will rest with the Board of Education.

The fees for two days a week for the Session, from October to June, are :—

	£	s.	d.
*For the Chemical or Metallurgical Laboratories	...	...	9 9 0
*For the Physical Laboratory	...	...	9 9 0
*For the Biological Laboratories	...	...	7 7 0

NOTE.—One-fourth of the fee for the whole Session must be paid by the student on entrance, under the usual conditions of the University. The remaining three-fourths of the fee will be paid by the Board of Education, in equal instalments, at the commencement of each term, subject, however, to the right of the Board to withhold payment of the second and third instalments should the reports not be satisfactory.

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\* Including such of the Lectures as the Teachers are able and willing to attend.

### Harding Scholarships in German.

A Scholarship of the annual value of £50, tenable during three years by students of German in the School of Modern Languages, may be awarded by the Faculty of Arts on the nomination of the Professor of German.

At the close of the third year a further Travelling Scholarship of £100 for one year may be awarded to the scholars, provided that he or she has taken the M.A. degree in the School of Modern Languages, and that his or her work and conduct for the previous three years have been satisfactory. The Travelling Scholarship will be tenable at a German University to be approved by the Faculty of Arts.

This scholarship is offered with the intention of inducing students of marked aptitude for linguistic and literary studies to devote themselves to a special course of study with a view to becoming teachers of modern languages in secondary schools in England. It will be continued only so long as the progress and conduct of the holder is satisfactory to the Faculty.

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### The Sunderland Scholarship.

A Scholarship of the value of £50 per annum, tenable for three years on the annual recommendation of the Faculty of Commerce, will be awarded triennially, if a suitable candidate presents himself. A new election will be made in June, 1908.

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### The Dudley Scholarship.

A Scholarship of the value of £30 per annum, given by the Dudley Education Committee, will be awarded by that Committee to a candidate from that district who is qualified to enter the Faculty of Commerce in the University, in October, 1908.

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### Birmingham Chamber of Commerce Scholarship.

A Scholarship in the Faculty of Commerce has been founded by the Birmingham Chamber of Commerce. Its

present, and probable future, annual value is £50, and this may be supplemented by £10 from other sources. It is tenable for three years if the student's progress is satisfactory. The election is made by a Committee of the Chamber of Commerce, which includes the Professors of Commerce and Finance. A new election will be made in September, 1910.

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## PRIZES.

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### The Karl Dammann Memorial Prize.

The "KARL DAMMANN MEMORIAL PRIZE," of the value of about £5, founded by a friend of the late Dr. Karl Dammann, the first Professor of German Language and Literature in Mason College, is awarded annually to the student who is recommended to the Senate as the most promising and distinguished student in German at the end of his or her second or third year after registration. The prize is given in the form of works in the German language.

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### Ehrhardt Prize.

A prize of £5, provided by Dr. E. F. Ehrhardt, is awarded annually on the recommendation of the Professor of Chemistry for a piece of research work conducted in the Chemical Laboratory.

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### The Panton Geological Prize.

The "PANTON PRIZE," of the value of Two Guineas--founded by Mrs. Panton in memory of her husband, the late G. A. Panton, Esq., F.R.S.E.--is awarded to the best student in the class of Local Geology; the prize being given upon the result of a competitive examination upon the Geology of the neighbourhood of Bir-

mingham or as a reward for a special thesis upon the Geology of the Birmingham District.

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#### Bunce Prize.

The "BUNCE PRIZE," of the value of about £3, founded by the late J. Thackray Bunce, is awarded annually on the result of a special examination held in the month of June. Further information relating to the subjects of examination for June, 1908, may be obtained from the Registrar.

*Candidates should send in their names to the Registrar on or before June 1st.*

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#### Gladstone Memorial Prize.

The Committee of the Gladstone Memorial Fund offers annually to students of the University a prize of Books, of the value of £5, for an Essay on a subject connected with History, Political Science, or Economics.

Candidates are recommended to consult the Professors of History and Commerce as to the proposed subject for the essay.

*The essays should be sent in to the Registrar on or before June 1st.*

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#### Austin Prize.

A prize of the value of about £2, founded in memory of the late Mr. W. H. Austin, M.A., Lecturer in Mathematics, is awarded annually to the student of the highest merit in Pure Mathematics at the Examination for the B.Sc. or B.A. degree.

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#### The Birmingham and Midland Scottish Society's Prize.

An annual prize of books to the value of £5 5s. is offered by the Birmingham and Midland Scottish Society,

and is open to all students of the University below the standing of Master of Arts or Science. The prize is awarded for the best essay on a subject relating to Scottish History or Literature determined from year to year by the Faculty of Arts. Further information relating to the subject of the essay may be obtained from the Registrar.

*The essays should be sent in to the Registrar on or before June 1st.*

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#### Sturge Prize.

A prize of £5 has been given by Mr. Joseph Sturge, and will be awarded in June, 1908, for the best Essay from a graduate of the University on the History of Birmingham in connexion with the movement that led to the Reform Bill of 1832.

*The Essays should be sent in to the Registrar on or before June 1st.*

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## GOLD MEDALS.

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### The Heslop Memorial Medal.

The "HESLOP GOLD MEDAL," provided out of the proceeds of a bequest to the College by the late Thomas Pretious Heslop, M.D., is awarded annually by the University, on the recommendation of the Senate, for the best Dissertation or Essay upon a subject to be selected by the candidate. The Medal is open to all past and present students of not less than two years' standing.

The subjects are arranged in the following divisions :—

- a.* Language, Literature, and Philosophy.
- b.* Mathematical and Physical Science, including Metallurgy and Engineering.
- c.* Biological and Geological Science, including Mining.

The award will be in division *a* for 1908, and *b* for 1909, *c* for 1910.

Candidates are at liberty to select any subject under the above headings, and are advised to consult their Professors in making their choice.

The essays must be sent in to the Registrar under a motto, not later than the 30th of April, accompanied by a sealed envelope, with the motto outside, containing the name of the candidate. The exercise should not be in the handwriting of the candidate.

If in any year the Medal be not awarded, it may be offered again in the following year in the same group of subjects, in addition to the Medal naturally offered for that year in another group, and so on until the completion of the cycle of subjects.

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### The Constance Naden Medal.

The "CONSTANCE NADEN GOLD MEDAL," founded by Surgeon Lieut.-Colonel R. Lewins, M.D., in memory of

the late Miss Constance Caroline Woodhill Naden, is awarded annually by the University, on the recommendation of the Senate, for the best exercise under one of the following headings :—

- a.* An English Poem.
- b.* A dissertation on a literary subject.
- c.* A dissertation on any subject relating to mental and moral science.
- d.* An examination of any of the fundamental principles or axioms of science, with their bearings upon modern thought.

The competition for the medal is open to all present or past students of the University, who have attended systematic courses during two sessions.

The exercises must be sent in to the Registrar, under a motto, not later than the 30th of April, accompanied by a sealed envelope, bearing the motto, and containing the name of the candidate. The exercise should not be in the handwriting of the candidate.

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## HUXLEY LECTURESHIP.

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A Huxley Lectureship of the value of £20 per annum has been endowed as a token of profound esteem on the part of the founder for the character of the late Professor Huxley, F.R.S., and in memory of his life and work. A lecture open to all members of the University without payment is delivered in the Winter term of each Session.

### HUXLEY LECTURERS.

- 1904.—Professor Sir Michael Foster, K.C.B., F.R.S.
- 1905.—Professor E. B. Poulton, F.R.S.
- 1906.—Sir Archibald Geikie, LL.D., F.R.S.

## VACATION READING.

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### FACULTY OF SCIENCE.

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#### MATHEMATICS.

- C. L. DODGSON, *Euclid and His Modern Rivals. Pillow Problems.*  
 H. H. TURNER, *Modern Astronomy.*  
 W. W. R. BALL, *Mathematical Recreations and Problems. A Short History of Mathematics.*

#### PHYSICS.

Students about to enter Course I. may read :—

- TYNDALL'S *Sound.*  
 S. P. THOMPSON'S *Light, Visible and Invisible.*

Those about to enter Courses II. and III. may read some of the following :—

- PERRY'S *Spinning Tops.*  
 BALL'S *Time and Tide.*  
 NEWCOMB'S *Astronomy.*  
 BOYS' *Soap Bubbles.*  
 ROTCH'S *Sounding the Ocean of Air.*  
 ROSCOE'S *Spectrum Analysis.*  
 CLERKE'S *System of the Stars.*  
 THOMSON'S *Electric Discharge in Gases.*

Or students may prefer to read some part of Text Books suitable for the different courses.

#### *Text Books for Course I.*

- LARDEN'S *School Course in Heat.*  
 D. E. JONES' *Lessons in Heat and Light.*  
 EDSER'S *Heat for Advanced Students.*  
 GLAZEBROOK'S *Light.*  
 CATCHPOOL'S *Text Book of Sound.*  
 POYSER'S *Advanced Magnetism and Electricity.*

Or for the whole course :—

- DESCHANEL'S *Natural Philosophy*, or EVERETT'S *Text Book of Physics.*

*Text Books for Courses II. and III.*

- WORTHINGTON'S *Dynamics of Rotation*. II.  
 POYNTING and THOMSON'S *Properties of Matter*. II.  
 POYNTING and THOMSON'S *Sound*. III.  
 POYNTING and THOMSON'S *Heat*. II. and III.  
 EDSER'S *Light*. II. and III.  
 FOSTER and PORTER'S *Electricity and Magnetism*. II. and III.

**CHEMISTRY.**

*A.* Students intending to enter for the First Year's Course may profitably read :—

- (1) NEWTH'S *Inorganic Chemistry*.
- (2) DOBBIN and WALKER'S *Chemical Theory for Beginners*.
- (3) HOLLEMAN'S *Inorganic Chemistry*.

*B.* Students intending to enter for the Second Year's Course may profitably read :—

- (1) OSTWALD'S *Foundations of Analytical Chemistry*.
- (2) OSTWALD'S *Principles of Inorganic Chemistry*.
- (3) WALKER'S *Introduction to Physical Chemistry*.
- (4) WADE'S *Organic Chemistry*, especially the introductory chapters and those relating to the fatty compounds.

*C.* Students intending to enter for the Third Year's Course may profitably read :—

- (1) WADE'S *Organic Chemistry* (revision).
- (2) HOLLEMAN'S *Organic Chemistry*.
- (3) WALKER'S *Introduction to Physical Chemistry* (revision).
- (4) NERNST'S *Theoretical Chemistry* (2nd edit.), or VAN'T HOFF'S *Lectures on Theoretical and Physical Chemistry*.
- (5) LACHMAN'S *Spirit of Organic Chemistry*.
- (6) ERNST v. MEYER'S *History of Chemistry*.
- (7) FINDLAY'S *Phase Rule*.
- (8) LEHFELDT'S or LE BLANC'S *Electro-chemistry*.

**ZOOLOGY.****FIRST YEAR.**

*The Study of Animal Life*, by J. ARTHUR THOMPSON (John Murray).

*The Colours of Animals*, by E. B. POULTON (International Science Series).

*Darwinism*, by A. R. WALLACE (Macmillan and Co.).

*Lectures on Darwinian Theory*, by A. MILNES MARSHALL (David Nutt).

*Outlines of Zoology*, by J. ARTHUR THOMPSON (Young J. Pentland).

*Text-book of Zoology*, by T. J. PARKER and W. A. HASWELL (Macmillan and Co.).

## SECOND YEAR.

*The Origin of Species*, by CHARLES DARWIN (John Murray).

*Descent of Man*, by CHARLES DARWIN (John Murray).

*Recent Progress in the Study of Variation, Heredity and Evolution*, R. H. LOCK (John Murray).

*Experimental Zoology*, by T. H. MORGAN (Macmillan and Co.).

*Heredity*, by J. ARTHUR THOMPSON (John Murray).

*Island Life*, by A. R. WALLACE (Macmillan and Co.).

*The Malay Archipelago*, by A. R. WALLACE (Macmillan and Co.).

*Notes by a Naturalist on H.M.S. Challenger*, by H. N. MOSELEY (John Murray).

*Animal Life*, by CARL SEMPER (International Science Series).

*The various volumes of The Cambridge Natural History* (Macmillan and Co.).

*Amphioxus and the Ancestry of Vertebrates*, by ARTHUR WILLEY (Macmillan and Co.).

*The Cell in Development and Inheritance*, by E. B. WILSON (Macmillan and Co.).

*An Introduction to the Study of Mammals, Living and Extinct*, by W. H. FLOWER and R. LYDEKKER (A. and C. Black).

*Vertebrate Embryology*, by A. MILNES MARSHALL (Smith, Elder and Co.).

*Vertebrate Palaeontology*, by A. SMITH WOODWARD (Cambridge University Press).

*Geographical Distribution of Animals*, two vols., by A. R. WALLACE (Macmillan and Co.).

The Professor will be glad to advise students in their choice of books.

## BOTANY.

### (1) After Matriculation and before entering University.

FIELD BOTANY, with the aid of GROOM'S *Elementary Botany* (Bell and Sons), or HENSLOW'S *How to Study Wild Flowers* (Religious Tract Society).

LUBBOCK'S *Flowers, Fruits, and Leaves* (Macmillan's "Nature" Series).

(2) *At end of First University Year.*

FIELD BOTANY, using HOOKER'S *Students' Flora of the British Isles* (Macmillan). As a convenient book for the pocket, HAYWARD'S *Botanist's Pocket Book* (Bell and Sons).

LUBBOCK'S *British Wild Flowers in relation to Insects* (Macmillan's "Nature" Series). COULTER'S *Plant Relations* (Appleton, New York). *Darwinism*, by A. R. WALLACE (Macmillan). *The Naturalist in Nicaragua*, by THOS. BELT (Bumpus). SACH'S *History of Botany* (Clarendon Press).

(3) *At end of Second University Year*, special suggestions will be made.

The Professor's holiday advice to students in general is—live so far as can be in the open air, and study Nature face to face, finding out her methods first hand.

## GEOLOGY.

## PRELIMINARY READING.

Students desirous of preparing themselves for entering the Classes in the Geological Department should read any of the ordinary text-books upon Physiography and Physical Geography, such as (1) PAGE and LAPWORTH'S *Elementary Physical Geography* (Blackwood), (2) MILL'S *Realm of Nature*, (3) HUXLEY'S *Physiography*, new edition by Gregory (Macmillan), or (4) HINMAN'S *Eclectic Physical Geography*.

The pupil is recommended to continue his reading in the subject in such works as GEIKIE'S *Scenery and Geology of Scotland*, or DAVIS' *Physical Geography* (Ginn).

The deeper the student's acquaintance with the facts and principles of Physical Geography, the more rapid and certain will be his future progress in the science of Geology.

## LONG VACATION READING.

The nature of the Long Vacation Reading will depend to a certain extent upon the special branch of the subject which the student is taking up for his degree. All students, however, should read LAPWORTH'S *Intermediate Geology* (Blackwood), NICHOLSON'S *Ancient Life-*

*History of the Earth*, GREEN'S *Physical Geology*, or the Dynamic portion of GEIKIE'S *Text-book of Geology*, JUKES-BROWNE'S *Building of the British Isles*, MARR'S *Scientific Study of Scenery*.

Those who are desirous of reading outside their ordinary work may study LYELL'S *Principles of Geology*, KAYSER and LAKE'S *Comparative Geology*, JAMES GEIKIE'S *Great Ice Age*, the English edition of SUÈSS' *Face of the Earth*.

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## FACULTY OF ARTS.

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The following books are suggested to students about to commence their first, second, or third year's course for the B.A. Degree :—

### LATIN.

#### IN PREPARATION FOR COURSE I.

*The Aeneid* of Vergil in the verse translation of Rhoades (Longman).

MACKAIL, *Latin Literature* (Murray).

OMAN, *Seven Roman Statesmen*.

#### IN PREPARATION FOR COURSE II.

*Select Odes of Horace*, translated in verse by DE VERE (W. Scott's Canterbury Poets).

*Catullus*, translated in verse by MARTIN (Blackwood).

TACITUS, *Annals*, Book XII., chapters 31—40, and Book XIV., chapters 29—30, in CHURCH and BRODRIBB'S translation (Macmillan).

#### IN PREPARATION FOR COURSE III.

HORACE'S *Satires and Epistles*, translated in verse by CONINGTON (Bell).

SELLAR'S *Roman Poets of the Augustan Age: Horace and the Elegiac Poets* (Clarendon Press).

TACITUS, *Annals*, Book XIV., chapters 51—65, Book XV., chapters 19—23, 38—74, and Book XVI., chapters 1—35, in CHURCH and BRODRIBB'S translation (Macmillan).

SENECA, *Morals*, a selection from his prose translated by CLODE (Camelot Series, published by W. Scott).

### GREEK.

#### IN PREPARATION FOR COURSE I.

OMAN'S *History of Greece*, chapters 22—43 from B.C. 470—338).

BUTCHER'S *Demosthenes*, in "Classical Writers," edited by J. R. Green (Macmillan).

JEBB'S *Primer of Greek Literature* (Macmillan).

## IN PREPARATION FOR COURSE II.

- AESCHYLUS, *The House of Atreus* (translation of the *Oresteia*),  
by Morshead (K. Paul).  
*Balaustion's Adventure*, by ROBERT BROWNING (Smith,  
Elder and Co.).  
*The Student's Manual of Greek Tragedy*, edited by Verrall  
(Swan, Sonnenschein & Co.).  
*The Attic Theatre*, by HAIGH (Clarendon Press).

## IN PREPARATION FOR COURSE III.

- HOMER, *Iliad*, translated by Leaf, Lang, and Myers (Macmillan).  
JEBB'S *Introduction to Homer* (Maclehose), and *Development of Greek Poetry* (Macmillan).  
PLATO, *Crito*, *Gorgias*, and *Phædo*, translated by Jowett  
(Clarendon Press), or by Cary (Routledge).  
MURRAY'S *Euripides* (containing translation of the *Hippolytus* and *Bacchae*, and of ARISTOPHANES' *Frogs*).  
*The Greek View of Life*, by G. L. DICKINSON (Methuen).

## ENGLISH.

The books recommended in the Syllabus namely :—

## FIRST YEAR.

- MATTHEW ARNOLD'S *Lectures in Celtic Literature*.  
TEN BRUNK'S *Early English Literature*.  
MORE'S *Utopia*.  
HOOKER'S *Ecclesiastical Polity*, Bk. I.

## SECOND YEAR.

- BACON'S *Advancement of Learning*, Bk. I., *Novum Organum*,  
Bk. I. (Aphorisms xxxviii—lxviii, inclusive).  
SWIFT'S *Battle of the Books*, and *Tale of a Tub*.

## THIRD YEAR.

- MATTHEW ARNOLD'S *Function of Criticism at the Present Time*, and *Pagan and Mediaeval Religious Sentiment*.  
STE. BENVE'S *Essays on the Literary Tradition*, and Review  
of Taine's *History of English Literature* (A. J. Butler's  
Select Essays of Ste. Beuve).

## FRENCH.

## FIRST YEAR.

*Tartarin de Tarascon*, par A. DAUDET.

*Vie de Collège en France*, par LAURIE (Hetzell, Paris).

*Madame Corentin*, par R. BAZIN.

## SECOND YEAR.

*Le Paradoxe du Comédien*, par DIDEROT.

PELLISSIER, *Le Mouvement Littéraire au XIX<sup>e</sup> siècle* (Hachette, Paris).

TAINÉ, *Voyage aux Pyrénées* (Hachette, Paris).

ROBIQUET, *Histoire Municipale de Paris. Scènes et Récits Historiques* (Hachette, Paris).

MÉZIERES, *La Société Française* (Perrin, Paris).

## THIRD YEAR.

JUSSERAND, *Les Anglais au Moyen-Age* (Hachette, Paris).

LEMAISTRE, *L'Institut de France et nos grands établissements scientifiques* (Hachette, Paris).

BRUNETIERE, *L'évolution des genres dans la littérature* (Hachette, Paris).

PELLISSIER, *Etudes de Littérature contemporaine* (Perrin, Paris).

## GERMAN.

## FIRST YEAR.

W. H. DAWSON, *German Life in Town and Country* (George Newnes and Co.).

E. MÖRIKE, *Mozart auf der Reise nach Prag* (Harrop).

## SECOND YEAR.

K. FRANCKE, *Social Forces in German Literature* (Bell & Sons).

J. G. ROBERTSON, *A History of German Literature* (Blackwood).

S. WHITMAN, *Imperial Germany* (Trübner and Co.).

BEHAGEL-TRECHMANN, *A Short Historical Grammar of the German Language* (Macmillan and Co.).

GOETHE'S *Götz von Berlichingen*, translated by Sir Walter Scott (Bohn's Library).

SCHILLER'S *Wallenstein*, translated by Coleridge (Bohn's Library).

BALLADEN UND ROMANZEN, *The Golden Treasury of the Best German Ballads and Romances* (Macmillan and Co.).

SCHEFFEL'S *Ekkehard*, edited by H. Hager (Whittaker and Co.).

## THIRD YEAR.

- W. SCHERER, *Geschichte der deutschen Litteratur* (Berlin, Weidmann).
- F. PAULSEN, *Die Deutschen Universitäten* (Berlin).
- O. WEISE, *Unsere Muttersprache* (Leipzig, Teubner).
- G. H. LEWES, *The Life and Works of Goethe*.
- THOMAS CARLYLE, *The Life of Friedrich Schiller*.
- J. R. SEELEY, *Goethe Reviewed after Sixty Years* (London, Seeley and Co.).
- Deutsche Lyrik.* The Golden Treasury of the Best German Lyrical Poems (Macmillan and Co.).
- GOETHE'S *Faust* in the original, and Sir Theodore Martin's Translation.
- GOTTFRIED KELLER, *Die Leute von Seldwyla, Erzählungen* (Berlin, W. Hertz).
- GUSTAV FRENSSEN, *Jörn Uhl*.
- CLARA VIEBIG, *Die Wacht am Rhein*.



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## FACULTY OF MEDICINE.

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There are two Sessions in the academical year, and students may commence their studies at the beginning of either, but are recommended to enter at the commencement of the Winter Session. A student can, however, enter at any time during the Sessions.

THE WINTER SESSION begins on the 1st of October, 1907, and terminates on the 28th of March, 1908.

THE SUMMER SESSION commences on the 22nd of April, 1908, and terminates on the 4th of July, 1908.

The Dean's Office is open daily, and all information may be obtained there. The Dean attends during Term on Tuesdays from 12 to 1, and at other times by appointment. During vacations information may be obtained by letter.

All Fees are payable in advance (*i.e.*, at the beginning of the Session on account of which they are due), at the Secretary's Office in the University. Cheques should be drawn in favour of Mr. Geo. H. Morley.

*All the Courses, Scholarships, Degrees, and Diplomas in the University are open to students of both sexes.*

Students, on entrance, are required to produce a testimonial or such other evidence of good character as shall be satisfactory to the Dean, and to sign an engagement that they will conform to such regulations as have been or may be made for the maintenance of order in the University.

Students intending to take lodgings in Birmingham or the vicinity are requested to place themselves in communication with the Secretary.

## SCHOLARSHIPS AND PRIZES.

### SANDS-COX SCHOLARSHIP.

The Sands-Cox Scholarship, of the value of £42, is awarded annually to the Candidate amongst those entering as students of the Faculty of Medicine in the month of October, who shall have obtained the highest marks at the Matriculation Examination in the previous month of June.

Provided that—

- (a) No Candidate shall be elected whose age exceeds nineteen on the first day of the examination.
- (b) No Candidate shall be elected who shall not have attained to a position in the first class, and satisfied the Examiners that he has shown sufficient merit for the award.
- (c) The payment shall be made in two annual instalments, and in the form of remission of fees.
- (d) The second instalment shall not be paid until the scholar presents a certificate from the Dean, showing that his first year's work has been satisfactory.

### SYDENHAM SCHOLARSHIPS.

1. One or more Scholarships of the value of £42 each will be offered annually.
2. The Scholar or Scholars will be elected by vote of the Council on the recommendation of the Faculty of Medicine.
3. The Scholarships are limited to the orphan sons of legally qualified Medical Men on entrance as first year students of the University.
4. The orphan sons of former students of the Birmingham Medical School will have priority of election.

5. No Sydenham Scholar will be elected whose age exceeds 23 years on the day of election.

6. The Scholarship may be held for three years, subject to good behaviour; and one-third of the Scholarship will be paid annually.

7. All applications for a Sydenham Scholarship should be addressed to the Dean of the Medical Faculty on or before the 3rd of October in each year, and each candidate is required to furnish such evidence of eligibility as he considers necessary.

### QUEEN'S SCHOLARSHIPS.

Queen's Scholarships of the value of £10 10s. each are allotted annually, on the recommendation of the Examiners, to the students taking the first place and obtaining "first-class" marks at the second, third, fourth, and final University Examinations respectively held in June.

In the Third Examination the Scholarship is awarded to the Student obtaining the highest first class marks in Pathology and Bacteriology, provided that such student passes at the same examination in the subjects of Materia Medica and Practical Pharmacy.

### INGLEBY SCHOLARSHIP.

The Ingleby Scholarship (value £10), founded in memory of the late Dr. Ingleby, formerly Professor of Midwifery in the Queen's College, will be offered annually to the candidate who obtains at the June Final Examination the highest marks in the subjects of Midwifery and Gynaecology, provided that the Candidate is placed in the "First Class" in the aforementioned subjects.

### RUSSELL MEMORIAL PRIZE.

This prize was founded by students of the Queen's College in memory of the late Dr. James Russell, formerly Honorary Physician to the General Hospital.

It is a prize of books awarded annually to the student who, not being of more than six years' standing as a student of the School of Medicine of the University, shall pass the best examination in the subject of Nervous Diseases. Entries for this Examination must be sent to the Dean, in writing, on or before June 1st.

### THE WALTER MYERS TRAVELLING STUDENTSHIP.

In memory of his son, Dr. Walter Myers, who died of yellow fever when making an investigation of that disease for the Liverpool School of Tropical Medicine, his father, Mr. George Myers, of Birmingham, has founded and endowed a travelling studentship in the University of Birmingham. Holders of this studentship, which will be awarded early in October in each year, must possess the degrees in medicine and surgery of the University of Birmingham. They must also possess the degree of B.Sc., which must have been obtained either at the University of Birmingham or London, or at either of the Universities of Oxford or Cambridge, should such degree be obtainable at either of those Universities. They must study for a year at one of certain Universities in Germany, and any papers that they may publish must appear under the name of the Walter Myers Studentship. The studentship, which will be of the value of £150, will only be awarded should a candidate of sufficient promise present himself. The subjects in which the student may pursue investigations are pathology or clinical medicine, combined with pathological research. The studentship may be prolonged over a second year, but at a diminished stipend. The Deed of Foundation of the studentship is printed on page 653, from which further particulars may be obtained.

Applications for this studentship must be sent in to the Dean of the Medical Faculty on or before October 1st.

### GEORGE HENRY MARSHALL SCHOLARSHIP.

The George Henry Marshall Scholarship in Ophthalmology of the value of £10 is awarded or expended from time to time in the form of grants towards the expenses of research, the publication of original papers, the purchase of apparatus or books, or in such other way as the Medical Faculty may consider best, any instrument, book, or other object so purchased being the property of the University.

Any past or present Student of the Medical Faculty of the University or member of the staff of the Medical School or of any affiliated Hospital, may apply for assistance of the kind above mentioned, provided the object in view be connected with research in Ophthalmology.

Applications must be made to the Dean of the Medical Faculty, in writing, on or before the 1st of October.

### WILLIAM RICHARDS MEMORIAL PRIZE.

This prize, value £3 3s., which belongs to and is adjudicated upon by the University Medical Society, is awarded to the student member of the Society who shall send in the best paper during the year, such paper to be read at a meeting of the Society.

### ENTRANCE SCHOLARSHIP FOR DENTAL STUDENTS.

This Scholarship, of the value of £37 10s., is offered annually.

It is awarded to the student who, entering for the Dental Degree of the University in October, or having entered not earlier than the previous April, shall pass the best examination in the subjects studied during his apprenticeship.

Candidates must be under the age of twenty-one years.

Application for admission must be sent to the Dean on or before October 12th.

### CLINICAL PRIZES.

**The following Prizes are given annually by the Clinical Board.**

Senior Medical Prize, for students during their "final" year, to the value of	... ...	£5	5
Senior Surgical Prize, ditto	... ...	£5	5
Junior Medical Prize, for students before the commencement of their "final" year, to the value of	... ... ...	£3	3
Junior Surgical Prize, ditto	... ...	£3	3
Midwifery Prize, for students during their "final" year, to the value of	... ...	£4	4

Regulations for these Prizes will be found on page 517.

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## COURSES OF INSTRUCTION AND EXAMINATIONS FOR DEGREES IN MEDICINE AND SURGERY.

### *First Winter.*

- Anatomy.
- Dissections.
- Chemistry.
- Practical Chemistry.
- Physics.
- Practical Physics.
- Elementary Biology.

### *First Summer.*

- Chemistry.
- Practical Chemistry.
- Physics.
- Practical Physics.
- Elementary Biology.

*FIRST EXAMINATION: Chemistry, Physics and Elementary Biology.*

### *Second Winter.*

- Anatomy.
- Dissections.
- Physiology.
- Practical Physiology.
- Hospital Tutorial.

### *Second Summer.*

- Anatomy.
- Dissections.
- Physiology.
- Practical Physiology.
- Hospital Tutorial.

*SECOND EXAMINATION: Anatomy and Physiology.*

### *Third Winter.*

- Surgery.
- Pathology.
- Practical Pathology.
- Hospital Practice.

### *Third Summer.*

- Practical Pathology.
- Materia Medica.
- Practical Pharmacy.
- Hospital Practice.

*THIRD EXAMINATION: Pathology and Bacteriology, Materia Medica, and Practical Pharmacy.*

### *Fourth Winter.*

- Medicine.
- Surgery.
- Public Health.
- Midwifery.
- Hospital Practice.

### *Fourth Summer.*

- Forensic Medicine.
- Practical Forensic Medicine.
- Toxicology.
- Practical Toxicology.
- Mental Diseases.
- Hospital Practice.

*FOURTH EXAMINATION: Forensic Medicine, Toxicology, and Public Health.*

### *Fifth Winter.*

- Medicine.
- Gynaecology.
- Therapeutics.
- Medical & Surgical Anatomy.
- Operative Surgery.
- Ophthalmology.
- Hospital Practice.
- Vaccination.
- Fever Hospital (3 months).
- Asylum Practice (3 months).

### *Fifth Summer.*

- Hospital Practice.
- Asylum Practice.
- (If not taken in Winter.)

*FINAL EXAMINATION: Medicine, Surgery, Midwifery, Gynaecology, Therapeutics, Mental Diseases, and Ophthalmology, for M.B., Ch.B.*

## FACULTY OF MEDICINE.

1907-1908.

## FIRST YEAR TIME TABLE.

SUBJECT.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Chemistry ... ... ... 9.30	9.30	9.30	9.30	9.30	...	...
" Practical ... ... 2.0	...	2.0	...	...	...	...
Anatomy ... ... ... 10.30	...	10.30	...	...	...	...
Practical Anatomy ... ... ... 2 to 5	...	2 to 5	...	9 to 11	9 to 12	
Physics ... ... ... 11.30	...	11.30	...	11.30	...	...
" Practical ... ... ...	...	...	...	...	2.30	...
Elementary Biology ... ... ... 12.30	...	12.30	...	...	...	...
" " Practical ... ... 10.30	...	...	...	...	...	...
<b>SUMMER SESSION.</b>						
Chemistry ... ... ... 9.30	...	9.30	...	9.30	...	...
Practical Chemistry ... ... ... 2.0	2.0	2.0	...	2.0	...	9.30
Physics ... ... ... ...	9.30	...	9.30	...	...	...
" Practical ... ... ...	...	...	...	...	2.30	...
Elementary Biology ... ... ... 12.30	...	12.30	...	12.30	...	...
" " Practical ... ... 10.30	...	10.30	...	10.30	...	...

## SECOND YEAR TIME TABLE.

SUBJECT.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Anatomy ...	... 12.0	12.0	12.0	12.0	...	...
Embryology ...	... 3.0	...	...	...	...	...
Practical Anatomy ...	{ 9 to 12 2 " 5	2 to 5	9 to 10 2 " 5	9 to 10 2 " 5	9 to 10 2 " 5	...
Physiology ...	.. 10.30	10.30	10.30	10.30	10.30	...
" Experimental (Oct. to Dec.) ..	...	...	...	2.30 or 2.30	...	...
" Chemical (Jan. to March) ...	...	...	...	2.30 or 2.30	...	...
General or Queen's Hospital ...	...	...	...	...	...	9.0
<b>SUMMER SESSION.</b>						
Anatomy ...	... 10.0	...	10.0	...	10.0	...
" Practical ...	{ 9 to 10 2 " 5	9 to 11 3 " 2	9 to 10 5 " 2	9 to 11 3 " 2	9 to 10 5 " 2	...
Physiology ...	... 3.0	...	...	3.0	...	...
" Practical Histology ...	11.0	11.0	11.0	11.0	11.0	...
General or Queen's Hospital ...	...	...	...	...	...	9.0

## THIRD YEAR TIME TABLE.

<b>WINTER SESSION.</b>						
General or Queen's Hospital ...	9.0	9.0	9.0	9.0	9.0	9.0
Surgery ...	...	4.0	4.0	...	4.0	...
Pathology ...	... 2.0	2.0	2.0	2.0	2.0	...
" Practical ...	... 3.0	...	...	3.0	...	...
<b>SUMMER SESSION.</b>						
General or Queen's Hospital ..	9.0	9.0	9.0	9.0	9.0	9.0
Practical Pathology ...	2.0	...	...	...	2.0	...
Materia Medica...	... 2.0	...	...	2.0	...	...
Practical Pharmacy ...	... 3.0	...	...	3.0	...	...

## FOURTH YEAR TIME TABLE.

SUBJECT.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
General or Queen's Hospital ...	9.0	9.0	9.0	9.0	9.0	9.0
Medicine ...	...	3.0	3.0	...	3.0	...
Surgery ...	...	4.0	4.0	...	4.0	...
Public Health ...	3.0	...	...	...	...	...
Midwifery ...	4.0	...	...	4.0	...	...
<b>SUMMER SESSION.</b>						
General or Queen's Hospital ...	9.0	9.0	9.0	9.0	9.0	9.0
Forensic Medicine ...	3.0	...	...	3.0	3.0	...
" Practical ...	4.0	4.0	...	...	...	...
Toxicology ...	2.0	...	...	...	...	...
" Practical ...	...	...	...	...	2.0	...
Mental Diseases ...	...	2.0	...	2.0	...	...

## FIFTH YEAR TIME TABLE.

SUBJECT.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
General or Queen's Hospital ...	9.0	9.0	9.0	9.0	9.0	9.0
Medicine ...	...	3.0	3.0	...	3.0	...
Gynaecology ...	...	4.0	...	...	4.0	...
Therapeutics ...	3.0	...	...	3.0	...	...
Surg. and Med. Anat. } (Oct. to Dec.) }	2.0	...	2.0	...	2.0	...
Ophthalmology (Jan. to March) ...	2.0	...	...	...	2.0	...
Operative Surgery ...	...	...	...	...	...	...
City Asylum (Jan. to March) ...	...	...	...	...	...	10.0
Fever Hospital (Oct. to Dec. ) or Jan. to March) ...	...	...	...	...	...	11.30
Vaccination (Priory Rooms) ...	...	...	...	...	...	...
Medicine—Tutorial ...	3.0	...	...	...	3.0	...
Surgery—Tutorial ...	4.0	...	...	4.0	...	...
Midwifery—Tutorial ...	...	...	...	5.0	...	...
<b>SUMMER SESSION.</b>						
General or Queen's Hospital ...	9.0	9.0	9.0	9.0	9.0	...
City Asylum ...	...	...	...	...	...	10.0
Medicine—Tutorial ...	3.0	...	...	...	3.0	...
Surgery—Tutorial ...	4.0	...	...	4.0	...	...
Midwifery—Tutorial ...	...	...	...	5.0	...	...

All Students are requested to take notice that they must attend **at least two-thirds** of the lectures and practical classes of each course, and that the Schedules of those who do not observe this regulation will not be signed. They must attend the class examinations in Chemistry, Physics, and Biology, and are advised to attend also all other class examinations.

## REGULATIONS FOR MEDICAL AND SURGICAL DEGREES.

The University confers the degrees of Bachelor and Doctor of Medicine (M.B. and M.D.) and of Bachelor and Master of Surgery (Ch.B. and Ch.M.). The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council.

As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of recognising examinations passed at such other Universities as exempting from the examinations in Chemistry, Physics, and Elementary Biology. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognised by the University.

Candidates are allowed to enter for the First Professional M.B., Ch.B. Examination (Chemistry, Physics and Biology) before commencing residence in the University, provided that they have already passed the Matriculation Examination or some Preliminary Examination accepted by the University in lieu of its Matriculation, such candidates to be eligible for the Final Examination for M.B., Ch.B., after four years residence in the University, and by producing evidence that they have been registered Medical Students by the General Medical Council for a period of five years.

*Candidates for the above degrees must have complied with the following regulations :—*

They must have passed (a) the Matriculation Examination of the University in Chemistry or Experimental Mechanics, English Language, Literature and History; Latin; Mathematics; and one other foreign language; or (b) some other examination recognised as equivalent to the Matriculation.

A Matriculation Examination will be held on the 14th of September, 1908, and succeeding days, for the convenience of students desiring to commence their medical studies in October. Entries for this examination must be sent to the Registrar of the University prior to August 10th.

The Matriculation Examination is held in June and September in each year, and the Regulations for the same will be sent on application to the Registrar.

*For the present* the University will recognise any one of the following examinations, in lieu of its own Matriculation, in the case of Medical students, provided always that such examination shall have included the subjects of English, Latin, Mathematics, Chemistry or Experimental Mechanics or some other branch of Experimental Physics, and any one of the following: Greek, French, German, or any other modern foreign language; and that all the subjects have been passed at one examination.

- (a) The Previous Examination of the University of Cambridge.
- (b) Responsions of the University of Oxford.
- (c) The Preliminary or Matriculation Examination of any recognised University.
- (d) The (Higher) Certificate of the Oxford and Cambridge Examinations Board.
- \* (e) The Oxford or Cambridge Junior Local Examinations, with First or Second Class Honours, or with distinctions in two subjects, which may be either languages or mathematics.
- (f) The Oxford or Cambridge Senior Local Examination.

Candidates must pursue the regular curriculum of study, and pass the prescribed examinations, subject to the following regulations:—

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\* The acceptance of this Examination will be discontinued after October 1st, 1907.

- (a) The Winter Session includes the Winter and Spring Terms, and the Summer Session corresponds with the Summer Term as set down in the Calendar.
- (b) At the end of each course of lectures or practical instruction, the student must obtain the signature of his teacher in the schedule book, which he will be required to lodge with the Registrar when entering his name for an examination.
- (c) This certificate must contain a statement that the student has attended to the satisfaction of the Professor, Lecturer, or Hospital Teacher not less than two-thirds of the lectures, practical classes, or clinical instruction, of which the course consists, together with such class examinations or other exercises as each teacher may prescribe in connection with his own course. In cases of illness duly certified, the Dean has a discretionary power to relax the rule as to the attendance at two-thirds of the lectures.
- (d) For the subjects included in the First Medical Examination, Medical students must conform to the regulations of the Faculty of Science in the matter of class examinations and term work, and the marks given for terminal work will be dealt with by the Board of Examiners in the same manner as in the examinations of the Faculty of Science. In the subjects of all the subsequent Medical Examinations, Class Examinations will be held at the discretion of each Professor, but at least once in each Term and students are strongly recommended to attend these. No particular standard of marks will be exacted, but the students' class and examination work will be submitted to the Examiners at the University Examination and will be taken into consideration by them.

- (e) The classes in the University must be taken out in the order and during the years specified in the Time Table, unless the student shall have received written permission from the Dean to vary the order of his study. In no case will students be permitted to enter upon Hospital study, other than that set down for the second year, until the Second Examination shall have been passed.
- (f) In each examination, except the first and third, the student will be required to pass in *all* the subjects set down for that examination; failure in any one subject will entail the loss of the examination.
- (g) The First, Second, Third, and Fourth Medical Examinations take place in the month of June in each year, but Supplementary Examinations may also be held in the month of September. Students are in general required to take the ordinary Examinations in June, but in cases of illness or in other special circumstances the Dean of the Faculty may at his discretion allow students to postpone their Examinations until September. Students who fail at the June Examination may be allowed, at the discretion of the Board of Examiners, to present themselves for re-examination in the following September. Students who pass in the practical examination in a subject at the June Examination may be excused the practical examination in such subject in the following September, at the discretion of the Board of Examiners. The Board of Examiners may require a candidate who has failed at an examination to attend during a second year courses of Practical or Theoretical Study or both, in the subject or subjects in which he has failed.

- (h) The Final Examination takes place in June and December in each year. In the case of failure in the final examination, the student will be required, before being re-admitted to examination, to produce a certificate as evidence of six months further attendance on clinical work at some recognised hospital or hospitals.

*Note.*—Every candidate will be required to produce a certificate of having been registered as a medical student by the General Medical Council before admission to the Second Medical Examination.

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## COURSE OF INSTRUCTION FOR DEGREES IN MEDICINE AND SURGERY.

### First Year.

**ANATOMY.**—One course of lectures during the Winter Session, with practical work extending over the same period.

**CHEMISTRY.**—One course of lectures and practical work during the Winter Session, with a second course, accompanied by practical work during the Summer Session.

*Note.*—Students are strongly recommended to study Elementary Chemistry before entering on this course.

**PHYSICS.**—One course of lectures accompanied by practical work, extending over the Winter and Summer Sessions.

**ELEMENTARY BIOLOGY.**—A course of lectures during the Winter and Summer Sessions, with practical work extending over the same period.

At the end of the First Summer Session students will be eligible for the First Examination, viz., Chemistry, Physics and Elementary Biology.

Students may present themselves for *all* or *any two* of these subjects. In either case the candidate must pass in two subjects in order to secure credit for any part of the Examination.

*Note.*—Students who have passed the Intermediate Examination for Degrees in Science in these subjects will be exempt from further examination in them.

#### Second Year.

**ANATOMY.**—One course of lectures during the Winter Session, and one during the Summer Session, with practical work extending over the same period.

*Note.*—The certificate in Anatomy must show that the student has dissected the entire body *at least* once.

**PHYSIOLOGY.**—One course of lectures accompanied by practical work during the Winter Session, and a course of lectures and practical work during the Summer Session. Before commencing this course students will be required to provide themselves with a microscope subject to the regulations on page 460.

**HOSPITAL.**—Attendance on special Surgical Tutorial Classes will be required on Saturday mornings during the Winter and Summer Sessions.

At the end of the Second Summer the student who has duly followed the above courses will be eligible for the Second Examination, viz., Anatomy and Physiology. Students must present themselves for both of these subjects, and a candidate must pass in the two subjects in order to secure credit for the Examination.

#### Third Year.

**SURGERY.**—One course of lectures during the Winter Session.

**PATHOLOGY.**—One course of lectures and practical work during the Winter Session, with a course of practical work during the Summer Session. Before attending this course the student will be required to add to his microscope the additional parts mentioned in the Regulations on page 460.

**MATERIA MEDICA.**—One course of lectures during the Summer Session, with a practical course of instruction in Pharmacy during the same Session.

HOSPITAL.—The course of instruction as set down in the Regulations for Hospital work must be followed. (See page 504).

At the end of the Summer Session the student who has been duly certified may present himself for the Third Examination in Pathology and Bacteriology and Materia Medica and Practical Pharmacy.

(Candidates for this Examination are required to take the whole of the subjects—viz., Pathology and Bacteriology, and Materia Medica and Pharmacy—together at one Examination. Candidates may pass in one group of subjects—viz., Pathology and Bacteriology, or Materia Medica and Pharmacy—provided they obtain a reasonable standard of marks in the group in which they fail.)

#### Fourth Year.

MEDICINE.—One course of lectures during the Winter Session.

SURGERY.—One course of lectures during the Winter Session.

HYGIENE AND PUBLIC HEALTH.—One course of lectures during the Winter Session.

MIDWIFERY.—One course of lectures during the Winter Session.

FORENSIC MEDICINE AND TOXICOLOGY.—One course of lectures accompanied by practical work in both subjects during the Summer Session.

MENTAL DISEASES.—One course of lectures during the Summer Session.

HOSPITAL.—The course of instruction as set down in the Regulations for Hospital work must be followed. (See page 504).

At the end of this year the student who has been duly certified for the courses prescribed for the fourth year will be eligible to present himself for the Fourth Examination, viz., Forensic Medicine, Toxicology and Public Health.

## Fifth Year.

MEDICINE.—One course of lectures during the Winter Session.

GYN.ECOLOGY.—One course of lectures during the Winter Session.

THERAPEUTICS.—One course of lectures during the Winter Session.

SURGICAL AND MEDICAL ANATOMY.—One course of lectures extending over three months during the Winter Session.

OPERATIVE SURGERY.—One course of practical instruction during the Winter Session.

OPHTHALMOLOGY.—One course of lectures during the Winter Session.

HOSPITAL (GENERAL CLINICAL).—The course of instruction as set down in the Regulations for Hospital work must be followed. (See page 504.)

FEVER HOSPITAL.—A course of instruction extending over not less than three months.

*Note.*—The certificate must include a statement that the student has personally taken notes of not less than six cases of fever.

ASYLUM PRACTICE.—A course of instruction extending over not less than three months.

*Note.*—The student must present to the examiners at the time of examination at least four properly filled up certificates of lunacy drawn up by himself after personal examination of insane patients, and notes of two cases taken by himself, both to be certified by his teacher.

VACCINATION.—The student must follow the course laid down by the instructions of the Local Government Board. (See page 530.)

In addition to evidence that the above courses have been duly completed, the student will, on presenting himself for the final examination, be required to produce the following additional certificates:—

- (a) Of having attained his twenty-first year.

- (b) Of having during his third and fourth years performed the duties of clerk and dresser according to the rules laid down in the regulations for Hospital work.
- (c) Of having attended during at least twelve months the demonstrations given in the *post-mortem* room of a recognised Hospital, and of having acted for three months as *post-mortem* clerk.
- (d) Of having attended during three months the practice of an Obstetric Department or Hospital recognised by the University or of having attended not less than twenty cases of labour, the first five at least of which shall have been conducted under the personal supervision of a registered practitioner, and of having continued such attendance throughout the puerperal period.
- (e) Of having, during at least three months, received in either a General or Special Hospital, recognised by the University, Clinical instruction in the Diseases peculiar to Women.

*Note.*—The student must present to the examiners, at the time of his examination, notes of at least six cases of this character taken by himself and certified as such by the teacher from whom he received his instruction.

- (f) Of having, during at least three months, received in either a General or Special Hospital, recognised by the University, Clinical instruction in Ophthalmology.

*Note.*—The Certificate must state that the student has received personal instruction in the detection and correction of errors of refraction.

- (g) Of having received practical instruction in the administration of Anaesthetics.

On presenting the above certificates, the student will be eligible to enter for the Final Examination in Medicine, Surgery, Midwifery, Gynaecology, Therapeutics, Ophthalmology, and Mental Diseases.

On passing this examination the student will be permitted to proceed to the Degrees of Bachelor of Medicine and Bachelor of Surgery.

## DEGREES OF M.D. AND Ch.M.

At the end of one year from the date of having passed the Final M.B., Ch.B. examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both.

Candidates for either of these Degrees will be required to comply with the following Regulations :—

### For the Degree of M.D.

Every candidate for this degree shall present a Thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose Thesis is of exceptional merit from any part of these examinations.

*Note.—Theses must be either printed or typewritten and two copies must be presented, one of which will be returned to the Candidate.*

A Thesis may be presented in any of the following departments of study :—

- (a) Anatomy, including Comparative Anatomy.
- (b) Physiology.
- (c) Human or Comparative Pathology.
- (d) Bacteriology.
- (e) Pharmacology.
- (f) Therapeutics.
- (g) Medicine.
- (h) Mental Diseases.
- (i) Preventive Medicine or Public Health.
- (j) Toxicology.
- (k) Legal Medicine.
- (l) Midwifery.

For the Degree of Ch.M.

Candidates are required to comply with the following Regulations :—

1. Every candidate shall present a Thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below. In addition the candidates will be required to pass a general examination in Principles and Practice of Surgery, and to perform operations on the Cadaver.

*Note.—Theses must be either printed or typewritten and two copies must be presented, one of which will be returned to the Candidate.*

2. It will be in the power of the Board of Examiners to exempt a candidate whose Thesis is of exceptional merit from any part of these examinations.

3. The candidate may be examined in that department of the medical curriculum from which the subject of his Thesis is chosen, and the Examiners may require to see the notes of original observations on which the Thesis is based :—

- (a) Surgery.
- (b) Pathology.
- (c) Bacteriology.
- (d) Gynæcology.
- (e) Ophthalmology.

**The Fee for either of these Examinations is Ten Pounds.**

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### COMBINED COURSE FOR SCIENCE AND MEDICAL DEGREES.

Students in the Faculty of Medicine, by devoting six years to study in the University instead of five years, may obtain a degree in Science (B.Sc.) in addition to their medical degrees. The course of study for the first year is that prescribed for the Intermediate Science

Examination in Physics, Chemistry and Biology. After passing the Intermediate Science Examination, students must during the following two years devote themselves entirely to the study of Anatomy (including Anthropology) and Physiology, taking one of these subjects as a principal subject, and the other as a double subsidiary subject for the degree of Bachelor of Science. Candidates who have passed the degree examinations in these subjects will be excused the first and second Medical Examinations, and can enter on the final three years' curriculum for medical degrees.

### ADMISSION OF GRADUATES OF OTHER UNIVERSITIES.

Graduates in Medicine of other Universities who have taken at least three years of their curriculum in the Birmingham Medical School are admitted to the Examination for the Degree of M.D. or Ch.M. on presenting evidence of having been engaged for at least one year in post-graduation study either in a laboratory of the University or in a Hospital associated with the University and approved of by the Medical Faculty, or partly in both such places.

Graduates in Medicine of other Universities who are not past students of the Birmingham Medical School are admitted to the Examination for the Degree of M.D. or Ch.M. under the following regulations:—

- (1) They must possess a degree of a British or Colonial University recognised for registration by the General Medical Council and approved of by the Senate of the University.
- (2) They must have been engaged, to the satisfaction of the Faculty, in post-graduation study for a period of not less than two years either in research work in a laboratory of this University, or in special study whilst holding an appointment approved of by the Faculty in one or more of the Hospitals associated with the University.

# UNIVERSITY FEES.

## MEDICAL FACULTY.

### Membership Fees.

Composition Students on entering pay a Membership Fee of £3 3s., which admits them to the University for five years. At the expiration of this period they may, at the discretion of the Dean, be called upon to pay the membership fees demanded from occasional students.

Occasional or Class Students are required to pay £1 1s. for each Winter Session and 10s. 6d. for each Summer Session during which they are in attendance at the University.

### Class Fees.

Students wishing to do so can pay for each class as they take it, the following table showing the fees for each course :—

			£	s.	d.
Anatomy Lectures (1st Winter)	...	...	6	6	0
Practical Anatomy (1st Winter)	...	...	5	5	0
Anatomy Lectures (2nd Winter)	...	...	6	6	0
Practical Anatomy (2nd Winter)	...	...	5	5	0
Anatomy and Practical Anatomy (one Summer)	...	...	3	3	0
Physiology	...	...	6	6	0
Physiology, Practical	...	...	4	4	0
Medicine	...	...	6	6	0
Surgery	...	...	6	6	0
Chemistry	...	...	4	4	0
Chemistry, Practical	...	...	3	3	0
Elementary Biology	...	...	5	5	0
Physics	...	...	5	5	0
Materia Medica and Pharmacy	...	...	2	2	0
Pathology	...	...	4	4	0
Pathology, Practical	...	...	4	4	0
Therapeutics	...	...	4	4	0
Forensic Medicine and Toxicology	...	...	4	4	0
Public Health	...	...	3	3	0
Operative Surgery	...	...	2	2	0
Lunacy and Mental Diseases	...	...	2	2	0
Ophthalmology	...	...	1	1	0
Applied Anatomy	...	...	1	1	0
Midwifery	...	...	4	4	0
Gynaecology	...	...	2	2	0
<hr/>					
			<u>£</u>	<u>101</u>	<u>17</u>
			0		

*Note.*—Composition Students desiring to repeat any course will be required to pay a half fee for such course. In the case of Practical Anatomy this will be £3 3s. The fee for three months Practical Anatomy in the Winter is £2 2s. For repeating the Summer course in Anatomy the fee is £1 11 6d.

#### Composition Fee.

The COMPOSITION FEE, £85, is inclusive and payable in four annual instalments, viz.:—£25, £25, £15, and £20 at the commencement of each year. This fee covers all the courses necessary for the Degrees of this and other Universities and the ordinary qualifications of the Licensing Boards. It does not include, however, courses for Public Health Diplomas, nor those for the Preliminary Scientific Examination of the University of London, nor the additional courses required for the Fellowship of the Royal College of Surgeons, and other such higher diplomas and degrees. It is not a *perpetual* fee, and students allowing their courses to fall into arrear, without having previously obtained the written permission of the Dean to do so, are liable to the forfeiture of the unused portion of their Composition Fee.

#### Incidental Fees.

Composition students taking courses for the first time are not required to pay these fees. But any Composition Student desiring to repeat a practical course will have to pay the incidental fee as well as the half-fee for attendance. Class Fee Students are required to pay the incidental fee as well as the class fee.

	£	s.	d.
Dissecting Room (each Winter) ... ... ...	1	11	6
Dissecting Room (each Summer) ... ... ...	0	10	6
Practical Physiology ... ... ...	2	2	0
Practical Pathology ... ... ...	1	11	6
Practical Pharmacy ... ... ...	0	10	6
Operative Surgery ... ... ...	0	10	6
Practical Forensic Medicine and Toxicology ..	0	10	6

*Note.*—All these sums are payable to the Secretary.

#### Total Cost.

For the convenience of those desiring to ascertain the total cost of obtaining the degrees of Bachelor of

Medicine and Bachelor of Surgery, the following table has been drawn up. It presumes that the student enters by the Composition system and makes no allowance for failures at examinations. No allowance is made either for the cost of books, instruments, etc., or for private tuition, should such be required.

	£ s. d.	£ s. d.
MATRICULATION ... ... ...	2 0 0	<hr/> 2 0 0
FIRST YEAR.—Membership Fee ...	3 3 0	
First Composition ...	25 0 0	
<i>First Examination</i> ...	2 0 0	
	<hr/>	30 3 0
SECOND YEAR.—Second Composition 25 0 0		
First Hospital Com- position ... ...	12 0 0	
<i>Second Examination</i> ...	2 0 0	
	<hr/>	39 0 0
THIRD YEAR.—Third Composition ...	15 0 0	
Second Hospital Com- position ... ...	15 0 0	
<i>Third Examination</i> ...	2 0 0	
	<hr/>	32 0 0
FOURTH YEAR.—Fourth Composition 20 0 0		
Third Hospital Com- position ... ...	15 0 0	
<i>Fourth Examination</i> ...	2 0 0	
	<hr/>	37 0 0
FIFTH YEAR.—Vaccination ...	1 11 6	
Fever Hospital ...	2 2 0	
Asylum ..	3 3 0	
<i>Final Examination</i> ...	2 0 0	
	<hr/>	8 16 6
Admission to Degrees		6 0 0
	<hr/>	<hr/>
	£154 19 6	

*Note.*—All fees (except those for Hospital) are payable to the Secretary. Cheques should be drawn in favour of Mr. Geo. H. Morley.

#### Fees for Referred Subjects.

(3 months' courses.)      £ s. d.

Anatomy (including Incidental Fee) ...	... ...	2 17 9
Chemistry ... ... ...	... ...	1 11 6
Physics ... ... ...	... ...	1 11 6
Elementary Biology ... ... ...	... ...	1 11 6
Physiology (including Incidental Fee) ...	... ...	2 2 0

## Microscopes.

It is essential that every well-educated medical man should possess his own microscope. Students will, therefore, be required to provide themselves with a satisfactory instrument before attending the course of Practical Physiology. Before attending the Practical Course in Pathology, they will be required to add a higher power lens and such other accessories as are necessary for the study of Bacteriology. Students can provide themselves with instruments, but in that case each instrument will have to be submitted to the Professor of Physiology, and its further accessories to the Professor of Pathology, and no student will be permitted to use in class an instrument which has not been approved by the Professor. The instrument recommended by the Faculty is the Delepine pattern microscope, manufactured by Messrs. Swift and Son. Students desiring to do so, can procure this instrument through the University by paying the sums set down below, in the Dean's office. All students, not already possessing a suitable instrument, are advised to follow this course, since they will obtain a substantial reduction in price by so doing. Moreover, all instruments purchased in this way will have been carefully examined by the Professors of Physiology and Pathology, so that the purchaser will be certain that he is obtaining a first-class microscope. The price of the microscope with the parts necessary for the Course of Practical Physiology will be £8 11s. od., and this sum must be paid at the commencement of the second winter. The accessories necessary for the Course of Practical Pathology will cost in addition, £5 6s. 6d., and this sum will have to be paid at the commencement of the third winter. These sums include the charge for engraving the student's name on the various parts of the instrument.

## Examination and Admission Fees.

The fees payable before a student is admitted to any of the examinations are set down below. Students

failing at any examination will be called upon to pay a half-fee when next presenting themselves for the same examination.

						£ s. d.
Matriculation	...	...	...	...	...	2 0 0
First Examination	...	...	...	...	...	2 0 0
Second	"	...	...	...	...	2 0 0
Third	"	...	...	...	...	2 0 0
Fourth	"	...	...	...	...	2 0 0
Final	"	for M.B., Ch.B.	...	...	...	2 0 0
M.D. or Ch.M.	...	...	...	...	...	2 0 0
Diploma in Public Health:—						
For each part of the Examination	...	...	...	...	...	2 0 0
B.Sc. in Public Health:—						
For each part of the Examination	...	...	...	...	...	2 0 0
Admission to Degrees M.B., Ch.B.	...	...	...	...	...	6 0 0
Admission to Degrees M.D. or Ch.M.	...	...	...	...	...	8 0 0
Admission to Diploma in Public Health	...	...	...	...	...	6 0 0
Admission to B.Sc. in Public Health	...	...	...	...	...	6 0 0

*Admission fees must be paid at the same time as the fees for the Final Examinations for the Degrees or Diplomas.*

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## REGULATIONS TO BE OBSERVED BY STUDENTS.

1.—Students on applying to enter any class are required to sign a declaration that they will observe the Ordinances of the University and conform to such regulations as have been or may be made for the maintenance of order in the University and in the classes they attend.

2.—Students who have passed the Matriculation examination or an examination accepted by the University as the equivalent of the Matriculation are eligible to become candidates for Degrees in the University. Such candidates are required to sign the Register of Matriculated Students, and after registration become Undergraduates of the University. Undergraduates enjoy the status of Membership of the University and are entitled to the privileges of the Guild of Undergraduates. Undergraduates are required to wear academic dress when in attendance upon University lectures, etc. Students who are not Undergraduates are not entitled to wear academic dress.

3.—Students are not permitted to be in the building before 8.45 a.m., nor after 6 p.m., unless attending classes or the meetings of some University Society.

4.—All students are required to conduct themselves in a quiet and orderly manner whilst in the building, not only during lecture hours, but on entering and leaving the building.

5.—Smoking is prohibited, except in the Students' Common Room and the Medical Students' Reading Room. Students are not permitted to loiter about in the corridors or front hall.

6.—Card playing is prohibited in any part of the University.

7.—Students committing any damage to the building, or property, will be required to pay for making good the same, and may be excluded from attendance at the University till payment is made.

8.—Students are required to attend punctually and regularly at the lectures and classes for which their names are entered.

9.—When students have been absent it is desirable that they should report the cause of their absence to the Professor on their return to the class. In the event of illness or unavoidable absence notice should be sent to the Dean as soon as convenient.

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### ATTENDANCE AND SCHEDULES.

1.—Before attending any class, students must obtain a card from the Dean, which they must *at once* present to the Secretary, paying at the same time any fees which may be due. Students are, however, particularly requested to notice that the card which they obtain from the Dean must be lodged at once with the Secretary whether any fees are payable at the same time or not. Until this is done no credit will be given for attendance upon any course.

II.—Students, whether composition or occasional, who have taken out all the classes for which they have paid, must understand that they have no further *right* to use the University Class-rooms, Library, or the Common Room. But all Composition Students can obtain permission from the Dean to use the Museums and Library, etc. The Dean will issue cards to such students each Session, and the cards may be required to be produced at any time. It must be distinctly understood that such cards are held subject to the good conduct of the student, and that the Dean may at any time cancel any student's card.

Occasional students can receive similar cards on paying the terminal Membership Fee.

III.—Students must obtain the necessary signatures to their Schedules immediately after the conclusion of the several courses.

IV.—No Student's Schedule will be signed unless he shall have attended at least *two-thirds* of the lectures given in the course.

V.—Should any student desire to obtain credit for lectures from which he has been absent on account of illness, he must apply to the Dean, and lodge a medical certificate in the Dean's office on his return to work.

VI.—All students may be required to attend an Examination before their Schedules are signed for *any* Examination of *any* examining body.

VII.—Schedules for *all* Examinations must be left in the Dean's office *at least two days* before they are required. The student's name and address must be filled in in ink, and the date of attendance on the several courses of lectures filled in in pencil. Schedules will not be attended to unless the above rules are carried out.

VIII.—Schedules sent in during vacations may be much delayed. Students should, therefore, obtain all necessary signatures before the last day of each term.

Students and others desiring information on any subject connected with the Medical Curriculum can obtain the same by applying at the Dean's Office in the University Medical Buildings.

### THE LIBRARY.

The Library is open daily during the Session from 9 a.m. to 6 p.m., except on Saturdays, when it is closed at 1 p.m. It is closed at 5 p.m. during the vacations.

### LOCKERS FOR BOOKS, &c.

Lockers are provided in the hat and coat room of the Medical Department, to enable students to preserve their books and papers in safety, at a charge of one shilling for the Summer Session, two shillings for the Winter Session, or two shillings and sixpence per year. Each student will be supplied with a key, upon which a deposit of one shilling will be charged. The key must be delivered up on or before the last day of the Session for which payment has been made, or the deposit will be forfeited.

### REGULATIONS FOR DEGREE AND DIPLOMA IN PUBLIC HEALTH.

#### General Conditions.

1.—All Candidates must be registered under the Medical Act.

2.—The Examinations will be held in the months of January and June, and will consist of two parts. No Candidate will be allowed to pass Part II. until he has passed Part I.

3.—Candidates may enter for Parts I and II. separately or at the same time.

4.—The Examination in each part will be written, oral and practical.

5.—Candidates intending to present themselves for either part of the Examination must give notice in writing to the Registrar of the University, on the date prescribed in the Calendar.

6.—The Fee for each part of the Examination is £2.

7.—Fee for admission to Degree or Diploma, £6.

**Conditions of Admission to the Examinations.**

1.—For Candidates registered under the Medical Act on or *before* the 1st of January, 1890.

Candidates so registered will be allowed to sit for examination on producing certificate of registration.

2.—For Candidates registered under the Medical Act *after* the 1st of January, 1890.

Candidates will be admitted to examination in Part I. on producing evidence :—

(1) Of being at least 23 years of age, and of having been possessed of a registrable qualification in Medicine, Surgery and Midwifery, for a period of twelve months.

(2) Of having received, after obtaining a registrable Qualification, during six months, practical instruction in Hygienic Chemistry, Bacteriology, and the Pathology of the Diseases of Animals transmissible to Man.

**NOTE.**—Graduates in Medicine of the University of Birmingham, or past students who have taken out the whole of their Curriculum in the Birmingham Medical School may attend the required instruction in Chemistry and Bacteriology either in this or in some other University, University College, or Medical School in Great Britain or Ireland. (Officers of R.A.M.C., see page 467).

Other candidates must attend the special courses of instruction in Chemistry and Bacteriology required for the Diploma in the University of Birmingham.

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Candidates will be admitted to examination in Part II. on producing evidence :—

(3) That, after obtaining a registrable Qualification, they have, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been

diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of

(a) In England and Wales, the Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health work; or

(b) In Scotland, a Medical Officer of Health of a County or Counties, or of one or more Sanitary Districts having a population of not less than 30,000; or

(c) In Ireland, a Medical Superintendent Officer of Health of a District or Districts having a population of not less than 30,000; or

(d) A Medical Officer of Health who is also a Teacher in the Department of Public Health of a recognised Medical School.

\* \*\* The certificate of an Assistant Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000 may be accepted as evidence under *Rule 3*, provided the Medical Officer of Health of the County or District in question permits the Assistant Officer to give the necessary instruction and to issue certificates.

Provided that the period of six months may be reduced to a period of *three* months (which shall be distinct and separate from the period of Laboratory instruction required under *Rule 2*), in the case of any Candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health Administration, given by a Teacher in the Department of Public Health of a recognised Medical School.

(4) That, after obtaining a registrable Qualification, he has attended during three months the practice of a

Hospital for Infectious Diseases recognised by the University, at which opportunities are afforded for the study of Methods of Administration.

Officers of the Royal Army Medical Corps who have studied Chemistry and Bacteriology at the Staff College, and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the Examination for the Diploma in Public Health, whether they have previously been students of the Birmingham School or not.

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### DEGREE IN PUBLIC HEALTH.

Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health, by conforming to all the requirements laid down for candidates for the Diploma in Public Health, and, in addition, they must have attended a three months' course of \*Geology in the University.

Past students of the Birmingham School of Medicine who have taken out their entire curriculum, or at least three years of the same therein, and have obtained a degree in Medicine in any British University are eligible for the Bachelorship in Science in Public Health on the same terms as graduates in Medicine of the University of Birmingham.

The Examination for the Degree is not the same as that for the Diploma, and a considerably higher standard of knowledge will be exacted at the former.

The whole of the instruction, with the exception of out-door Sanitary work which may be taken with Dr. Bostock Hill), required for the Degree and Diploma in Public Health can be taken out in the University.

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\* The Course in Geology is given on Mondays and Fridays at 12.30 during the Winter Term only.

## COURSE OF INSTRUCTION.

## Sanitary Chemistry.

Laboratory Course (Times by arrangement).

*B.Sc. or Diploma in Public Health.*—The Course extends over six months (not less than six hours weekly). For Syllabus of Course see page 480.

## Advanced Bacteriology.

This Class begins on Wednesday, January 15th, at 3.30 o'clock, and meets on Tuesdays, Wednesdays, and Fridays of each week until the end of March, each meeting occupying two hours. In addition there are special meetings in sections according to arrangement. This Course qualifies for the various Diplomas and Degrees in Public Health of this University and other Bodies. It consists of lectures, demonstrations, laboratory instruction, and practical work in Bacteriology, especially in relation to disease, public health, its application to various industries, the disposal of sewage, etc. For Syllabus see page 488.

## Hygiene and Public Health.

In the latter half of the Winter Session, commencing in January, a Special Course of Lectures for candidates for degrees and diplomas in Public Health is given on Sanitary Engineering, Law, and Statistics, on Mondays at 3 p.m.

## FEES—

	£	s.	d.
Sanitary Chemistry ...	8	8	0
Caution Money, deposit ...	1	0	0
Bacteriology ...	4	4	0
Incidental Fee... ...	1	1	0
Geology ...	2	2	0
Public Health Lectures ...	2	2	0

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## Syllabus for the Examinations.

## PART I.

- 1.—Physics in their application to Health, and with reference to Ventilation and Heating. Water Supply and Sewerage.
- 2.—Chemistry in its relation to Air, Water, Food, Soil, and Sewage.
- 3.—Microscopical Examinations of Air, Water, Food, Articles of Clothing, Parasites, &c.
- 4.—Bacteriology in relation to Sanitary Work.

The Examination in Part I. consists of *two* written papers, and a *viva voce*—in Public Health; a Practical in Bacteriology (which may include a *viva voce*); a Practical in Hygienic Chemistry, and an Examination in Practical Microscopy.

## PART II.

- 1.—The Origin, Pathology, and Prevention of Disease; with special reference to Infectious Disease.
- 2.—Effects of Unwholesome Air, Water, and Food.
- 3.—Diseases of Animals in relation to the Health of Man.
- 4.—Influence of occupation.—Unhealthy Trades.
- 5.—Influence of Climate.
- 6.—Sanitary Administration in relation to requirements of Houses and other buildings, Sanitary Engineering.
- 7.—Construction, Arrangement, and Management of Hospitals.
- 8.—Statistics in relation to Health.
- 9.—Sanitary Law, including Bye-laws, Orders and Regulations.
- 10.—Duties of Sanitary Officers.

The Examination in Part II. consists of *two* written papers and a *viva voce* in Public Health, and a Practical Examination in Outdoor Sanitary Work.

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# FACULTY OF MEDICINE.

## Syllabuses of Courses.

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### ANATOMY.

*Professor:* ARTHUR ROBINSON, M.D., M.D., C.M.  
(Edin.)

*Demonstrators:* { T. YEATES, M.B., C.M., B.Hy.  
PERCIVAL P. COLE, F.R.C.S., L.D.S.  
VIOLET A. P. COGHLILL, M.B., Ch.B.  
(Edin.).

*Hon. Demonstrators:* { W. E. BENNETT, M.B., Ch.B.,  
F.R.C.S.  
J. JAMESON EVANS, M.D., C.M.  
(Edin.), F.R.C.S.

#### I.—Descriptive Anatomy.

The *First Year's Course* includes a general account of the main systems of the body and a more detailed description of the Anatomy of the Upper and Lower limbs. The lectures are delivered during the Winter Session at 10.30 o'clock, on Mondays and Wednesdays.

The *Second Year's Course* is partly given during the Winter, partly during the Summer Session. In the *Winter* lectures are delivered at 12 o'clock on Mondays, Tuesdays, Wednesdays and Thursdays, and in the *Summer* on Mondays, Wednesdays and Fridays at 10 o'clock.

All these courses are accompanied by Demonstrations and Classes specially arranged to follow up the instruction given in the Lecture Theatre.

The Course of Lectures on *Human Embryology* is given during the second Winter Session, on Tuesdays at 3 p.m.

### Dental Course.

The Human Anatomy part of the Dental curriculum includes two Summer and one Winter's dissections, commencing in the first Summer, and two Summer Courses of Lectures. The Lectures in the first Summer are delivered at 2 p.m. on Mondays, Tuesdays, and Thursdays, and those in the second Summer on Mondays, Tuesdays and Thursdays at 12 o'clock noon.

A Course of Demonstrations on Elementary Anatomy is arranged for students who wish to acquire an elementary knowledge of *Human Anatomy*, but who do not intend to take either Medical or Dental qualifications.

### II.—Practical Anatomy.

The Dissecting Room is open during term time from 9 a.m. to 5 p.m., except on Saturdays, when it is closed at 1 p.m. One or more of the Staff of the Department is always in charge of the room and ready to help students finding themselves in any difficulty with their parts.

There is a separate Dissecting Room for Women Students in charge of Dr. Coghill.

Special instruction in Anatomy is given to Students reading for the Primary Fellowship. Fee: Five guineas.

NOTE.—All students, whether referred at examinations or otherwise, requiring further instruction in Anatomy must dissect unless excused by the Professor.

The Museum, which is open to all students, contains a large collection of specimens and models.

### III.—Medical and Surgical Anatomy.

*Lecturer:* WILLIAM F. HASLAM, F.R.C.S.

A Course of Lectures and Demonstrations for students in their fifth year will be given by the Lecturer on Applied Anatomy on Mondays, Wednesdays, and Fridays, from October to December inclusive, at 2 p.m.

## PHYSIOLOGY.

*Professor:* E. W. WACE CARLIER, M.Sc.; M.D. (Edin.), F.R.S.E.

*Lecturer:* J. H. RHODES, M.B., Ch.B. (Edin.), M.R.C.S.

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### I.—Systematic Physiology.

A Course of Lectures in Physiology will be delivered at 10.30 a.m. each day, except Monday and Saturday, throughout the Winter Session, and at 3 p.m. on Tuesdays and Thursdays throughout the Summer Session. It will consist of 100 lectures.

The Course will comprise —

#### WINTER.

- (1) General Chemistry of the Animal Body.
- (2) Structure, Chemistry and Physiology of the Cell and of the Simple Tissues.
- (3) Muscle and Nerve.
- (4) General Nutrition, including circulation of the blood and lymph, respiration (voice and speech), alimentation, nutrition of the tissues, internal secretions, excretion and the minute structure of the organs concerned.
- (5) Animal Heat, its production and regulation.
- (6) Dietetics.
- (7) Reproductive System.
- (8) The Senses and Sense Organs.

#### SUMMER.

- (9) The Sense Organs continued.
- (10) The Central Nervous System, its structure and functions.

### II.

A Course of Lectures of a less advanced kind for Dental students will be delivered on Mondays, Wednesdays, and Fridays, at 12 o'clock noon throughout the Winter Session.

The Course will comprise :—

- (1) Elementary General Chemistry of the Animal Body.
  - (2) The Cell and the Tissues.
  - (3) The principles of General Nutrition, including circulation of the blood and lymph, respiration, alimentation, nutrition of tissues, internal secretions, excretion, with the structure and functions of the organs concerned.
  - (4) Milk, and the principles of Dietetics.
  - (5) Animal Heat.
  - (6) Muscle and Nerve.
  - (7) Elementary Physiology of the Central Nervous System and the Sense Organs.
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### III.—Elementary Physiology.

A Course of Lectures on Elementary Physiology is given during the Winter Session to meet the requirements of School Teachers and others.

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### IV.—Practical Physiology.

The Course will extend over one Summer and one Winter Session.

A. HISTOLOGY.—This Class will meet in the Physiological Laboratory every day, except Saturday, throughout the Summer Session from 11 to 1. Each student will have the use of a microtome and will be supplied with all reagents, but he will be expected to furnish himself with a microscope (see p. 460), slides, cover-glasses, a razor and other sundries.

Each student will prepare and study microscopical specimens of most of the tissues and organs of the body, and will receive practical instruction in the use of the microscope and in elementary technique.

B. EXPERIMENTAL PHYSIOLOGY.—The Class will meet in the Physiological Laboratory on Thursday of each week from 2.30 to 4.30 during the first half of the Winter Session.

Each student will perform the simpler experiments, illustrating the physiology of muscle, nerve, heart and reflex-action, and will receive practical instruction in the use of the sphygmograph, cardiograph, stethograph, laryngoscope, and ophthalmoscope.

The student must supply himself with a dissecting case. This course will be repeated on Fridays if necessary.

C. PHYSIOLOGICAL CHEMISTRY.—This Class will meet in the Physiological Laboratory on Thursday of each week during the latter half of the Winter Session from 2.30 to 4.30.

Each student will perform the qualitative and quantitative analyses of the urine in its normal and abnormal conditions with special reference to clinical work, with additional practical exercises on the chemistry of the proteids, carbohydrates, food stuffs and their digestion, blood and bile. This course will be repeated on Fridays if necessary.

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#### V.—Advanced Practical Physiology.

SEE FACULTY OF SCIENCE.

The Physiological Laboratory is open daily, except Saturday, during both Summer and Winter Sessions from 10 a.m. to 5 p.m. for the prosecution of original research. Application to be made to the Professor.

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#### VI.—Dental Histology.

A Combined Lecture and Practical Course on Dental Histology is held during the Summer Session. (For Syllabus see page 555.)

## CHEMISTRY.

*Professor:* PERCY F. FRANKLAND, M.Sc. ; Ph.D. (Würzburg), B.Sc. (Lond.), LL.D. (St. And.), F.R.S.

*Lecturers:* ALEX. FINDLAY, M.A., D.Sc., (Aber.), Ph.D. (Leipzig.)  
 HAMILTON McCOMBIE, M.A. (Aber.), B.Sc. (Lond.), Ph.D. (Strasb.), A.R.C.S., A.I.C.

*Demonstrators:* C. K. TINKLER, B.Sc.  
 THOMAS J. MURRAY, Ph.D. (Leipzig).

*Special Lecturer on Physical Chemistry:* ALEX. FINDLAY, D.Sc.

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### Lecture Course on General Inorganic Chemistry.

The Lectures are delivered at 9.30 a.m. on Mondays, Tuesdays, Wednesdays and Thursdays during the Winter Session.

Some of the above meetings of the class will be devoted to tutorial work. Attendance at the tutorial meetings of the class is compulsory, as is performance of the exercises set by the Professor.

In connection with this course a class dealing specially with the metallic elements will be held on Mondays, from 2 to 2.45 p.m., during the Session, and a tutorial class at 9.30 a.m. on Fridays during the winter and spring terms, and at 10.30 a.m. on the same day, during the summer term. Attendance at these classes is compulsory, unless the student has been exempted by the Professor. No fee.

### Lecture Course on Organic Chemistry.

The Lectures are delivered at 9.30 a.m. on Mondays, Wednesdays, and Fridays, during the Summer Session.

Candidates for the First Medical Examination may be required to show knowledge of any of the subjects set forth in the following Syllabus :—

## I. GENERAL.

Nature of chemical change. Elements and compounds. Chemical affinity and the modes of chemical action. Regularities exhibited in the formation of compounds. Indestructibility of matter. Laws of constant, multiple, and equivalent proportions. Atomic theory. States of matter. Properties of Gases. Kinetic theory. Molecular theory. Avogadro's hypothesis. Atomic and molecular weights. Vapour density, isomorphism, atomic and molecular heats.

Chemical nomenclature, formulæ, equations. Valency. Solution. Osmotic pressure. Electrolysis. Ionic theory. Acids, bases, and salts.

Thermo-chemistry. Energy, its transformation and conservation. Liquefaction of Gases.

## II. SPECIAL.

Hydrogen. Oxygen. Ozone. Allotropy. Water ; physical properties, natural waters. Hydrogen peroxide. Nitrogen ; circulation of, in nature. The Atmosphere. Compounds of nitrogen with hydrogen ; oxides of nitrogen ; oxyacids of nitrogen ; halogen compounds of nitrogen.

Carbon, its circulation in nature. Coal. Oxides of carbon. Hydro-carbons ; methane, ethylene, acetylene. Combustion, flame, and luminosity.

Coal-gas, producer-gas, water-gas, oil-gas. Artificial illumination.

Chlorine and the halogens. Their compounds with hydrogen, their oxides, and oxyacids.

Sulphur ; compounds with oxygen, hydrogen, and carbon ; oxyacids of sulphur.

Phosphorus ; compounds with hydrogen, and oxygen ; oxyacids of phosphorus. Arsenic, antimony, and bismuth ; comparison of their properties and compounds with those of phosphorus and nitrogen.

Boron and silicon, and their more important compounds.

Classification of the Elements. Periodic law.

## METALS.

Occurrence, modes of isolation, and general properties of the following metals, and their more important compounds : —Sodium, potassium, barium, strontium, calcium, magnesium, iron, chromium, aluminium, zinc, manganese, nickel, cobalt, mercury, copper, bismuth, cadmium, lead, tin, silver, and gold.

TEXT BOOK.—Newth's Inorganic Chemistry.

### III. ORGANIC CHEMISTRY.

Analysis of Organic compounds. Formulae. Isomerism. Structure.

Hydro-carbons. Paraffins, Ethylene, Acetylene. Halogen derivatives. Chloroform. Iodoform.

Alcohols. Fermentation. Ether. Aldehydes. Chloral. Fatty Acids. Fats, Soap, and Saponification. Glycerine. Glycol. Oxalic acid. Succinic acid. Tartaric acid. Lactic acid. Citric acid.

Carbo-hydrates.

Cyanogen compounds and Amines.

Urea, Glycocoll, Uric acid.

Aromatic compounds. Benzene, Phenol, Aniline, Benzoic acid, Salicylic acid.

**TEXT BOOK.—Remsen's Organic Chemistry.**

### Practical Chemistry.

The Class meets at 2 p.m. on Mondays and Wednesdays during the Winter Session, and on Mondays, Tuesdays, Thursdays and Saturdays, during the Summer Session.

The practical work in the laboratory is intended to supplement the instruction given in the lectures, and to make the student personally familiar with the preparation of pure substances, and with the elements of qualitative and quantitative analysis.

### General Chemistry for Dental Students.

*Lectures:* Tuesdays and Thursdays, at 11.30 a.m., throughout the Winter Session.

*Laboratory:* Mondays, Tuesdays, and Thursdays, at 2 p.m. during the Winter Session.

### Synopsis of the Course.

#### INORGANIC CHEMISTRY.

**General Elementary Principles of Chemistry:—**

Simple substances. Mixtures. Chemical compounds. Laws of chemical combination. Atomic theory. Meaning and use of chemical symbols. Equations and simple calculations.

General characters of the chief types of inorganic matter, as illustrated by the following :—

Hydrogen and oxygen. Combustion. Oxidation and Reduction. Oxides. Acids. Bases. Salts. Ozone. Composition and properties of water. Nature of solutions. Osmotic pressure. Electrolysis. Rain, river, and spring water. Properties of hard and soft waters. Hydrogen peroxide.

Nitrogen.—The atmosphere. Methods of determining its composition. Ammonia and ammonium salts. Oxides of nitrogen. Nitric acid. General characters of nitrates and nitrites.

Carbon.—Allotropic forms. Carbon dioxide. Carbonates. Carbon monoxide. Carbon disulphide.

Halogens.—Chlorine. Hydrochloric acid. Hypochlorous acid. Sodium hypochlorite. Bleaching powder. Potassium chlorate. Bromine. Iodine. Hydrobromic and hydriodic acids.

Sulphur.—Allotropic forms. Hydrogen sulphide. Sulphur dioxide and trioxide. Sulphurous and sulphuric acids. General characters of sulphates and sulphites. Sodium thiosulphate.

Phosphorus.—Allotropic forms. Phosphorus pentoxide. Orthophosphoric acid.

Borax and boric acid. Silica and silicic acid.

The metals with their compounds, as enumerated below, excluding metallurgical processes :—

Aluminium, antimony, arsenic, barium, bismuth, calcium, copper, iron, lead, magnesium, manganese, mercury, potassium, silver, sodium, tin, zinc.

The more important oxides, sulphides, and salts of these metals with the acids already mentioned.

Potassium permanganate and potassium chromates.

#### ORGANIC CHEMISTRY.

Ultimate organic analysis as regards carbon, hydrogen, and nitrogen. Determination of empirical formulæ and molecular weight. Homologous series. Isomerism.

The general character of the chief types of organic compounds, as illustrated by the following members of the various classes :—

Methane. Ethane. Ethylene. Acetylene.—Chloroform. Iodoform.—Methyl and ethyl alcohols. Ethyl ether.—Formic and acetic aldehydes.—Chloral.—Formic and acetic acids and their salts.—Ethyl acetate.—Acetamide. Cyanogen. Hydrocyanic acid. Cyanides.—Urea and its synthesis.—Lactic, oxalic, and tartaric acids. Oxalates and tartrates.—Glycerol.—Fats and Saponification.

Benzene.—Phenol.—Benzoic aldehyde.—Benzoic and salicylic acids.

#### PRACTICAL CHEMISTRY.

##### (a) QUALITATIVE ANALYSIS : INORGANIC AND ORGANIC.

The Candidate may be required to perform the analysis of a simple salt or of a mixture of two metals and one acid selected from substances included in the following lists :—

Metals.—Sodium, potassium, ammonium, calcium, barium, magnesium, zinc, iron, aluminium, copper, silver, lead, mercury, bismuth, tin, antimony, arsenic.

Acids.—Hydrochloric, hydrobromic, hydriodic, nitric, carbonic, sulphuric, phosphoric, acetic, oxalic, tartaric, and hydrocyanic acids.

The substances may be present as element, oxide, sulphide, a simple salt, or a mixture. The acids may be present in the free state, or as a simple salt.

Candidates may be required to give equations illustrating the chemical reactions involved in testing for the above substances and, if requested, to explain the same.

##### (b) SIMPLE VOLUMETRIC ANALYSIS.

The estimation of the strength of solutions of potassium or sodium hydrates by standard sulphuric acid, and of dilute hydrochloric or nitric acids by standard sodium hydrate.

The estimation of solutions of oxalic acid by standard potassium permanganate.

##### (c) PREPARATIONS.

Candidates may be required to prepare one of the following compounds in a well-crystallized condition :—

Chloride of ammonium. Iodide of lead. Oxalate of ammonium. Nitrate of potassium, of barium, or of lead. Sulphate of copper. Ferrous sulphate. Acetate of lead. Acid tartrate of potassium. Tartar emetic.

Candidates will be required to exhibit to the Examiners the preparations which they have made.

Candidates will be allowed to make use of books or tables at the Practical Examination.

## Sanitary Chemistry.

Laboratory Course (Times by arrangement).

*B.Sc. or Diploma in Public Health.*—The Course extends over six months (not less than six hours weekly).

## Synopsis of the Course.

The use of the balance.

The methods of volumetric analysis, including the preparation of standard solutions, alkalimetry and acidimetry.

Kjeldhal's method for the determination of nitrogen.

The analysis of water, including the estimation of total solids (lime, magnesia, sulphates, chlorides, nitrates and nitrites, ammonia and poisonous metals); determination of temporary and permanent hardness, including the preparation of standard soap solution; organic impurities, acidity and alkalinity.

The detection of polluting gases.

Estimation of the amount of carbon dioxide in air.

Simple methods of eudiometry.

Analysis of milk, butter, beer.

Acidity of vinegar.

Determination of Urea.

Estimation of cane and grape sugars.

Microscopic examination of starches, muscular fibre, and the fibres of wool, cotton, and silk.

FEE:—£8 8s.—Caution Money Deposit £1.

## PHYSICS.

*Professor:* J. H. POYNTING, M.Sc.; Sc.D. Cantab., F.R.S., D.Sc. (Vic.), late Fellow of Trinity College, Cambridge.

*Lecturer:* G. A. SHAKESPEAR, B.A. (Cantab.), B.A., B.Sc. (Lond.).

*Assistant Lecturers:*  $\left\{ \begin{array}{l} \text{G. BARLOW, D.Sc. (Lond. and Wales).} \\ \text{A. D. DENNING, M.Sc.; Ph.D. (Heid.).} \end{array} \right.$

*Special Lecturer on Experimental Physics:*

G. A. SHAKESPEAR, B.A., B.Sc.

During the Winter Session the Lectures will be on Mondays, Wednesdays and Fridays, at 11.30.

During the Summer Session the Lectures will be on Tuesdays and Thursdays, at 9.30.

The Practical Class will be held in the Laboratory on Fridays, at 2.30 p.m. in both Sessions.

### Syllabus of Course.

#### *Properties of Solids—*

Sticking and sliding friction. Strains and stresses. Bulk strain and shear strain. Various kinds of permanent change of shape and rupture. Crystalline and amorphous solids.

#### *Properties of Liquids—*

Viscosity. Compressibility. Surface tension.

#### *Properties of Gases—*

Compressibility. Viscosity.

Kinetic theory of matter. Diffusion, solution, osmotic pressure.

#### *Heat—*

Temperature. Mercury in glass thermometer. Determinations of high and low temperature. Expansion of solids and liquids. Circulation and convection in liquids. Expansion of gases at constant pressure and increase of pressure at constant volume. Gas thermometers. Circulation and convection in gases. Movements of the atmosphere.

Quantity of heat. Specific heat and simple modes of measuring it.

Conduction of heat. Conductivity.

Heat a form of energy. The forms of energy and their transformations according to fixed rates of exchange. The conservation of energy. Joule's method of determining the mechanical equivalent of heat. The nature of heat on the kinetic theory of matter. Limitation in the amount of heat which can be transformed to work.

Change of state. Latent heat. Liquid vapour change. Evaporation. Boiling vapour pressure. Dependence of boiling point on pressure and explanation. Modes of measuring vapour pressure. Explanation of vapour pressure on the kinetic theory. Water vapour in the atmosphere. Hygrometers. Cloud. Fog. Dew. Solid-liquid change. Melting points. Change of volume on melting. Effect of pressure on melting point. Regelation.

Radiation. High and low radiating and absorbing powers. Comparison of properties of radiation from hot bodies and properties of light. Identification. The spectrum. Substances absorb the radiations which they can emit. Dark lines in solar and stellar spectra.

### *Light—*

Light a form of energy. Rectilinear propagation. Shadows. Eclipses. Inverse square law. Simple photometers. Reflection, refraction, and dispersion. Velocity of light. Light a form of wave motion. Illustrations of interference. The diffraction grating. Polarisation of light. Mirrors. Prisms. Lenses. The eye. Simple forms of telescope and microscope.

### *Sound—*

Sound arises from vibrating sources which send out longitudinal waves in air. Characteristics of the waves corresponding to loudness, pitch, and quality. Velocity of sound in air, and other media. Determinations of frequency. Resonance ; its use to analyse sounds. Harmonics and upper partials. Quality.

Transverse vibrations of strings. Vibrations of air in pipes  
Other vibrating sources.

Beats. Concord and discord. Combination tones.

### *Magnetism—*

Properties of magnets. The two poles ; their equality and inseparability. Magnetisation by induction. Methods of making magnets. Inverse square law. Magnetic fields and lines of force. The earth as a magnet. Declination, dip, and intensity.

### *Electricity—*

The two kinds of electrification and simple modes of producing them. Conductors and insulators. The gold leaf electroscope. Electrification by induction. Frictional electrical machines. The electrophorus. The Wimshurst machine. The Leyden jar. Production and disappearance of the two electrifications always in equal quantities. The electric field, considered as the seat of electric strain, electric force, and electric energy. The inverse square law. Potential and capacity. Distribution on conductors.

*Electro-magnetism—*

Electric discharge and the magnetic effects accompanying it. Electro-magnetic waves. Electric current. Voltaic and storage cells. The magnetic properties of current circuits. The ampere. Galvanometers and ampere-meters. Electric motors. Ohm's Law. Resistance. The heat developed in the circuit. Joule's Law. The ohm. The volt. Electrolysis. Electro-chemical equivalents. The induction of currents. Leuz's Law and Faraday's Law. The dynamo. The induction coil.

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*Elementary Course on Experimental Physics.*

This Course is held during the Winter Session.

*Lectures:* Tuesdays and Thursdays, at 9.30 a.m.

*Laboratory:* Fridays, 10.30 a.m. and 2.30 p.m.

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*Synopsis of the Course.**General Physics—*

Units of length, mass, and time. Definitions of velocity, momentum, acceleration, force, and work. Distinctions between solids, liquids, and gases. Specific gravities. Atmospheric pressure. Barometers. Air and water pumps. Siphon. Boyle's Law. Diffusion. Osmotic pressure. Dialysis. Capillary phenomena.

*Heat—*

Temperature and its measurement. Expansion of solids, liquids, and gases. Calorimetry. Specific heat. Heat of combustion. Change of state. Latent heat. Vapour-pressure, vapour-density, hygrometry. Conduction, convection, radiation. Relation between heat and work.

*Light—*

Laws of reflection and refraction. Mirrors and lenses. Images. Prismatic dispersion. The spectrum. Spectroscope. Microscope and telescope.

*Sound—*

Production and propagation of sound. Wave-length, velocity, pitch, loudness.

*Electricity—*

Electrification by friction and induction. Electrophorus. Condensers. Magnetic and heating effects of currents. Galvanometers. Electrolysis. Primary batteries. Accumulators. Measurement of electromotive force, current, and resistance. Ohm's Law. Induced currents. Induction coil.

**ELEMENTARY BIOLOGY.**

*Professor:* T. W. BRIDGE, M.Sc.; Sc.D. (Cantab.), F.R.S., F.L.S.

*Lecturer:* LEONARD DONCASTER, M.A. (Cantab.).

A Course of about Fifty Lectures will be given during the Winter and Summer Sessions of the first year.

*Lecture Days.*—Tuesdays and Thursdays, at 12.30.

**SYLLABUS.**

- A. Living and non-living matter.—Distinctive properties of living matter or protoplasm, as illustrated by the study of the Proteus animalcule or *Amœba*.—Distinction between Animals and Plants.—Comparison of the unicellular *Amœba* with the complex multicellular Frog.—Origin of the Frog. The egg-cell or ovum.—Segmentation of the ovum, and the subsequent formation of physiologically different groups of cells or tissues. Structure of the various elementary tissues of the Frog. Epithelia, connective, muscular, and nervous tissues. The combination of tissues to form organs.
- B. The anatomy and histology of the various systems of organs in the Frog, and the elementary physiology of the organs of digestion, circulation, and excretion. Physiological, division of labour and morphological differentiation of structure.
- C. This part of the course will treat of the structure of the following typical animals viewed from a comparative standpoint :—

The Proteus-animalcule (*Amœba*), the Bell-animalcule (*Vorticella*), the freshwater Polype (*Hydra*), the Earthworm (*Lumbricus*), the Crayfish (*Astacus*), the Dog-fish (*Scyllium*), the Frog (*Rana*), and the general structure of the Rabbit (*Lepus*).

- D. The concluding lectures of the course will deal with the phenomena of reproduction. Asexual and Sexual Reproduction. Ova and Spermatozoa. Spermatogenesis. Fertilization and Segmentation of the ovum in *Amphioxus* and *Rana*. The development and larval history of the Frog, treated in an elementary fashion.

**Laboratory Class.**

The Practical work will include the microscopic examination or dissection of the above-mentioned animal types.

*Practical Class.*—Tuesdays in the Winter Session, and Tuesdays and Thursdays in the Summer Session from 10.30 to 12.30.

**MEDICINE.**

*Professor:* R. SAUNDBY, M.Sc.; M.D. (Edin.), F.R.C.P.  
LL.D.

*Professor:* A. H. CARTER, M.Sc.; M.D. (Lond.),  
F.R.C.P.

*Assistant:* J. W. RUSSELL, M.A., M.D. (Cantab.),  
F.R.C.P.

*Lecture Days.*—Tuesday, Wednesday, and Friday, at  
3 p.m.

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This Course extends over two Winter Sessions, and includes—

1. An explanation of the nomenclature and classification of disease. The principles of etiology, symptomatology, diagnosis, prognosis, and treatment of disease in general.
  2. A description of special diseases, together with their causation, prevention, diagnosis, prognosis and treatment.
- Specific Infectious Diseases.
- Diseases of the Nervous System, Functional and Organic ; of the Brain, Spinal Cord, and Peripheral Nerves.
- Diseases of the Muscles.
- Diseases of the Heart and of the Blood Vessels.
- Diseases of the Respiratory System, Functional and Organic ; of the Larynx, Trachea, Lungs, and Pleural Sacs.
- Diseases of the Digestive System.
- Diseases of the Kidneys.
- Constitutional Diseases.
- The Intoxications, Sunstroke, Diseases of the Blood and Ductless Glands.
- Diseases due to Animal Parasites.
- Diseases of the Skin.

The Course will be illustrated by specimens from the Pathological Museum, and by drawings, diagrams, and charts.

Written Class Examinations are held during each term and all students are advised to attend them. Regular tutorial instruction is given by Dr. Russell to all students of the Class who wish to attend.

## SURGERY.

*Professor:* BENNETT MAY, M.Sc.; M.B., B.S. (Lond.), F.R.C.S.

*Professor:* GILBERT BARLING, M.Sc.; M.B., B.S. (Lond.), F.R.C.S.

*Assistant:* GEORGE HEATON, M.A., M.B. (Oxon.), F.R.C.S.

*Lecture Days.*—Tuesday, Wednesday, and Friday, at 4 p.m.

This Course, extending over two Winter Sessions, is devoted to a systematic consideration of the Principles and Practice of Surgery. It includes a complete description of—

1. General Principles, as illustrated by Repair and its aberrations.

Inflammation and its results.

The various forms of blood poisoning.

Tuberculosis. Syphilis.

Tumour formations, etc.

2. The Surgery of Special Regions as far as possible.

The Assistant to the Chair of Surgery gives tutorial instruction to Senior Students, and holds preparatory classes for the final Examination. Class Examinations are held during each term and all Students are advised to attend them.

The Course will be illustrated by Specimens from the Pathological Museum, and by drawings, diagrams, and charts.

## PATHOLOGY AND BACTERIOLOGY.

*Professor:* R. F. C. LEITH, M.Sc.; M.A., B.Sc., M.B. (Edin.), F.R.C.P.E.

*Assistants:*  $\left\{ \begin{array}{l} \text{JAMES MILLER, D.Sc., M.D., M.R.C.P.E.} \\ \text{C. J. LEWIS, M.D., D.Sc., F.R.C.P.} \\ \quad (\text{Edin.}) \\ \text{L. G. J. MACKEY, M.D. Ch.B.} \end{array} \right.$

*Special Lecturer in Bacteriology:* JAMES MILLER, M.D.

## A.—Ordinary Course for Medical Students.

This Course consists of two parts, viz., (1) a Systematic Course of Lectures on General Pathology and Bacteriology given in the winter term, and on Special Pathology given in the spring term, and (2) a Practical Course upon the same subjects, given partly concurrent with (1) and partly in the following summer term.

### The Systematic Course.

The Lectures commence on October 2nd, and are given daily, at 2 o'clock. They are fully illustrated by Macroscopic, Microscopic and Lantern Preparations, and a Special Series of Demonstrations on Macroscopic Morbid Anatomy is also given weekly. The Lectures include:—

## I. GENERAL PATHOLOGY AND BACTERIOLOGY:

- (1) Altered conditions of the circulation.
  - (2) Inflammation.
  - (3) Retrogressive Disturbances of Nutrition.
  - (4) Tumours.
  - (5) Animal Parasites.
  - (6) Pathogenic Bacteriology.

## 2. SPECIAL PATHOLOGY :-

The systematic study of the Etiology, Morbid Anatomy, and Histology of the diseases of the systems and organs of the body.

## (a) - The Winter Practical Course.

This Course is intended to fit in with and illustrate as far as possible the subjects treated of in the Systematic Lectures. It will meet on Mondays and Thursdays, at 3, immediately after the lectures throughout both the Winter and Spring Terms, each meeting lasting two hours. Special attention will be given to Inflammation, Healing Processes, Tumours, Animal Parasites and Bacteriology.

## (b)—The Summer Practical Course.

The Summer part of this Class commences on Friday, April 24th, at 2 o'clock, and meets on Monday and Friday of each week, each meeting occupying two hours. The Histological and other Methods of practical pathological investigation are studied, and the various diseased organs and tissues are examined in detail, both macroscopically and microscopically by each student.

Each student is supplied with all the necessary reagents and apparatus, but students must provide themselves with a microscope. (See Regulations, p. 460.)

## B.—Course of Advanced Bacteriology.

This Class begins on Tuesday, January 14th, at 3.30 o'clock, and meets on Tuesday, Wednesday, and Friday of each week until the end of March, each meeting occupying two hours. In addition there are special meetings in sections according to arrangement. This Course qualifies for the various Diplomas and Degrees in Public Health of this University and other Bodies. It consists of lectures, demonstrations, laboratory instruction, and practical work in Bacteriology, especially in relation to disease, public health, its application to various industries, the disposal of sewage, &c.

It includes :—

- I. GENERAL.—Methods of Sterilisation. Preparation of Culture Media. Isolation and Cultivation of Germs. Methods of Examination, staining, etc., of Bacteria. The separation of their products, etc.

II. SPECIAL.—The systematic study of the various pathogenic and the more important non-pathogenic bacteria in regard to cultural and morphological characters, methods of producing disease, antitoxin treatment and immunity. The examination of water, milk, foods, etc. Antiseptics and sterilisation in detail, etc., etc.

FEE :—Four Guineas.

INCIDENTAL FEE :—One Guinea.

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C—Course of Clinical Pathology and Bacteriology.

A Course suited to qualified medical men is given in the Summer Session, commencing on Thursday, April 23rd. It meets twice or thrice weekly for about two months; hours of meeting, 3.30 to 5.30, or by arrangement. It is devoted to the pathological and bacteriological methods of practical importance in the diagnosis of disease in hospital or private practice. It includes demonstrations and practical work in—

Histological methods for the examination of tumours, pieces of tissue and uterine scrapings.

The examination of the urine, chemically and microscopically.

The examination of the gastric contents, for free HCl, for disintegrated blood, etc.

The examination of the sputum.

The examination of fluids obtained by puncture of serous and other effusions, by lumbar puncture, by puncture of echinococcal and other cysts.

The examination of the blood.

A short consideration of those bacteria commonly met with in pathological processes in man, e.g., the Staphylococci and streptococci, the gonococcus, the pneumococcus, the typhoid bacillus and colon bacillus, the diphtheria bacillus and the tubercle bacillus.

Systematic explanations of these subjects, illustrated by lantern demonstrations, will also be given, in addition to the practical work of the Course.

FEE :—£3 3s.

INCIDENTAL FEE :—15s

The Pathological and Bacteriological Laboratory is open daily from 9 a.m. till 6 p.m. for the prosecution of private research, under the direction of Professor Leith and his assistants, to whom applications should be made.

The Pathological Museum is open daily, from 9 a.m. till 6 p.m., under the direction of Professor Leith. Several type-written catalogues, containing descriptions and particulars of the specimens, are available for consultation.

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#### Pathology and Bacteriology for Dental Students.

This Course begins on October 2nd and is continued daily at 2 o'clock for two and a half months. It consists of Lectures and lantern demonstrations upon the Principles of General Pathology and upon the structure, classification, and function of micro-organisms, especially those relating to the mouth, gums, teeth, and throat.

*Practical Dental Bacteriology.*—This Course is held in January on Mondays, from 3 to 5 p.m., and on Thursdays from 3 to 4 p.m. It includes practical work in the general principles of Bacteriology, in a few of the chief pathogenic bacteria of the body and, in detail, the bacteria of the mouth and teeth.

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#### HYGIENE AND PUBLIC HEALTH.

*Professor:* A. BOSTOCK HILL, M.Sc.; M.D., D.P.H. (Camb.), F.I.C.

*Assistant Lecturer in Hygiene:* R. A. LYSTER, M.B., Ch.B., B.Sc. (Public Health); B.Sc. (Lond.).

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*Lecture Day.*—Mondays, at 3 p.m., during the Winter Session.

This Course will include instruction in Hygiene as required for the ordinary Pass Examination, and will also be specially adapted to the requirements of candidates for degrees and diplomas in Public Health and State Medicine. The Lectures will be illustrated by experiments, diagrams, and a complete set of models. In connection with the Department there is a collection of Sanitary Appliances open to all students attending this class.

The subjects treated will be as follows:—

Introductory, aim and scope of Hygiene, results already obtained.

Water supply—varieties of—quantity and quality of water.  
Diseases produced by bad water. Water Analysis.

Air and Ventilation, Impurities of Air, Standard of Purity,  
Heating and Lighting, Natural and Mechanical Ventilation,  
Appliances.

Food and Diet, Unwholesome Food, Adulteration of Food,  
Characteristics of good Meat, Fish, etc. Diseases of  
Animals in relation to the Health of Man.

The Soil in relation to Health.

The Dwelling and Sanitary appliances in connection therewith.

Drainage and Construction, Scavenging, Disposal of Sewage  
and Refuse.

Climate and Meteorology.

Infectious Diseases and Methods of Disinfection, Nature of  
Contagia, Immunity, Isolation, Quarantine, Vaccination.

Statistics in relation to Health.

Offensive Trades.



In the latter half of the Winter Session, commencing in January, a Special Course for candidates for degrees and diplomas in Public Health is given on Sanitary Engineering, Law, and Statistics, on Mondays, at 3 p.m.

## MATERIA MEDICA AND PHARMACY.

*Lecturer:* J. COOLE KNEALE, M.B., Ch.B.

*Demonstrator:* F. R. GREENWOOD, M.B., Ch.B.; M.D., B.S. (Lond.), M.R.C.S.

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*Lecture Days.*—Tuesdays and Thursdays, at 2 p.m., during the Summer Session.

Materia Medica comprises the subjects of Pharmacognosy and Pharmacy.

Instruction in Materia Medica is given in—

- (a) A Course of eighteen Lectures.
- (b) Eighteen Practical Pharmacy Classes.
- (c) Thirteen Tutorial Classes.

### A.—Lectures on Materia Medica.

This Course includes the natural history, sensible and chemical properties and modes of administering remedies, ordinarily so-called. Such remedies consist of—

- Inorganic Substances.
- Chemical Products.
- Vegetable Substances.
- Animal Substances.

### B.—Practical Classes.

Practical instruction is given in the following subjects, which cannot be satisfactorily taught in lectures, on Tuesdays and Thursdays, at 3 p.m. :—

- Pharmacy, or the processes for obtaining the Pharmaceutical preparations of drugs.
- Prescription Writing.
- Dispensing, or the making up of medicines in forms suitable for administration in disease.

### Tutorial Classes.

These will consist of a recapitulation of the Lectures and Practical Classes.

Students have access to the Materia Medica Museum, where facilities are afforded for the practical examination of specimens.

The Museum contains (1) a collection of the official and officinal drugs, organic and inorganic; (2) a collection of drugs from all sources for lecture purposes; (3) a collection of the whole of the galenical preparations of the British Pharmacopœia; (4) a complete set of apparatus used in Pharmaceutical work.

## THERAPEUTICS.

*Professor:* ARTHUR FOXWELL, M.Sc.; M.A., M.D.  
(Cantab.), F.R.C.P.

*Assistant Lecturer in Pharmacology:* W. A. POTTS,  
M.D.; B.A. (Cantab.), M.D., C.M. (Edin.).

*Lecture Days.*—Mondays and Thursdays, at 3 p.m., during the Winter Session.

### SYLLABUS.

#### A. General Therapeutics.

Rest, Exercise (Massage, etc.), Habits, Nursing, Heat, Cold, Personal Hygiene.

##### Diet.

Natural Mineral Waters, their efficacy and its rationale. Short descriptions of illustrative Bathing and Drinking Spas. Inhalation and Douching.

Climatology, Temperature, Humidity, Winds as they affect Climate. Continental, Marine, and Mountain Climates. Classification of the Chief Climatic resorts, with illustrative descriptions of a few types.

#### B. Pharmacology.

An experimental course of twenty lectures.

#### Books.

Pharmacology. Dixon.

Diet. Hutchinson; Walker Hall (Purin Bodies) Luff (Gont).

Mineral Waters and Spas. Hermann Weber.

Climatology. Huggard.

**MIDWIFERY.**

*Professor:* EDWARD MALINS, M.Sc.; M.D. (Edin.), F.R.C.P.

*Assistant:* C. E. PURSLOW, M.D. (Lond.), M.R.C.P.

*Lecture Days.*—Mondays and Thursdays, at 4 p.m., during the Winter Session.

The Course comprises—The Physiological Anatomy of the pelvis and organs of generation in the female. The Physiology and development of the ovum and foetus. The Physiology of pregnancy—the change effected by it; the diagnosis and the management of pregnancy. The Physiology and mechanism of labour. The conduct of normal labour. The Physiology and management of Child-bed. Obstetric Surgery. The Pathology of pregnancy. The Pathology of labour. The Diseases of Child-bed.

**GYNÆCOLOGY.**

*Professor:* JOHN W. TAYLOR, M.Sc.; M.D., F.R.C.S.

*Assistant:* C. E. PURSLOW, M.D. (Lond.), M.R.C.P.

*Lecture Days.*—Tuesdays and Fridays, at 4 o'clock, during the Winter Session.

**SYLLABUS.****General Anatomical Considerations :**

- The boundaries and supports of the Peritoneal Cavity.
- The Pelvic Diaphragm and Pelvic Floor.
- The Peritoneum.

**The Anatomy of the External and Internal Genitalia :**

- Ovulation.
- The Retro-peritoneal Vessels.
- The Parovarium.

**Normal Menstruation :**

- Amenorrhœa.
- Menorrhagia.
- Dysmenorrhœa.

Gynaecological Examination.

Diseases of the Vulva.

Injuries and Diseases of the Vaginal Entrance.

Diseases and Injuries of the Vagina.

Genital Atresia and Genital Doubling.

(Vaginal and Abdominal Section.)

Diseases of the Uterus :

Inflammatory Diseases of the Uterus.

Adenomatous Disease of the Uterus.

Displacements of the Uterus.

Inversion of the Uterus.

Myoma of the Uterus.

Cancer and Sarcoma of the Uterus.

Diseases of the Ovaries :

Inflammation of the Ovaries.

New Growths.—

Ovarian Cystoma.

Ovarian Dermoids.

Ovarian Papilloma.

Ovarian Fibroma.

Ovarian Sarcoma and Carcinoma.

Parovarian Cysts.

Broad Ligament Tumours

Diseases of the Fallopian Tubes :

Gonorrhœal Salpingitis.

Tubercular Salpingitis.

New Growths of the Fallopian Tubes.

Extra Uterine Pregnancy and Intra-peritoneal  
Hæmatocoele :

Ovarian Pregnancy.

Tubal Pregnancy :

Tubo-Abdominal Pregnancy.

Tubo-Ligamentary Pregnancy.

Tubo-Uterine Pregnancy.

*Demonstrations.*—The Assistant holds a class for instruction in Midwifery and Gynaecology for students preparing for their final examinations, on Thursdays at 5 p.m. throughout the Winter and Summer Sessions.

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## FORENSIC MEDICINE AND TOXICOLOGY.

### Forensic Medicine.

*Professor:* J. T. J. MORRISON, M.Sc.; M.A., M.B., B.C. (Cantab.), F.R.C.S.

*Assistant:* R. A. LYSTER, M.B., Ch.B., B.Sc. (Public Health); B.Sc. (Lond.).

*Lecture Days.*—Mondays, Thursdays, and Fridays, at 3 p.m., during the Summer Session.

The Course treats of the several branches of Legal Medicine necessary to the medical practitioner for his guidance in Medico-Legal Inquiries, and for giving evidence in civil and criminal causes in Courts of Justice.

### SYLLABUS.

Historical outline of the legal and social relations of the Medical profession in England. Rise of physicians, surgeons, and apothecaries, and their Corporations. The first Medical Act, 1511; the Apothecaries' Act, 1815; the Medical Acts of 1858 and 1886. General Medical Council. The Medical Register.

The scope of Forensic Medicine. Legal responsibilities and duties of medical men. The process of law before Coroner, Magistrate, and Judge. Medical evidence.

The signs of death. Determination of the date of death. The causes of death, and particularly of sudden death. The post-mortem as a medico-legal inquiry. Exhumation.

Identification of the living and of the dead. Determination of age, sex, stature, and personal peculiarities.

Death by violent or unnatural causes—drowning, hanging, strangulation, suffocation, and smothering; wounds and mechanical injuries; extremes of temperature; explosives; electric shock; lightning stroke; starvation. Indications of accident, suicide, or homicide.

Wounds and other personal injuries; question of accident or assault; compensation claims in such cases.

Offences against chastity; rape; unnatural offences.

Criminal abortion. Live birth. Infanticide.

Malapraxis and malingering.

Lunacy certificates.

Life Assurance.

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The Lectures will be supplemented by a practical Course of laboratory work on Mondays and Tuesdays, at 4 p.m.

#### SYLLABUS.

Human Blood: its microscopical, chemical, and spectroscopic features. Special characters of the blood of other mammals, birds, fishes, and amphibians.

Discrimination of stains resembling blood; iron salts, vegetable colours, aniline dyes.

Seminal stains. Gonorrhœal pus.

Hair of man and domestic animals.

Fibres: cotton, linen, wool, silk.

Marks made by vitriol and other mineral acids.

Demonstration of the Fœtus at various ages.

Finger-prints and footmarks.

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#### Toxicology.

*Lecturer:* A. BOSTOCK HILL, M.Sc.; M.D., D.P.H. (Camb.), F.I.C.

*Assistant:* R. A. LYSTER, M.B., Ch.B., B.Sc. (Public Health); B.Sc. (Lond.).

*Lecture Day.*—Mondays, at 2 o'clock, during the Summer Session.

This course comprises a discussion on the mode of action of poisons and the various circumstances influencing this; classification of poisons; methods of procedure in cases of poisoning; detection and estimation of poisons; symptoms; post-mortem appearances observed, and treatment to be adopted in cases of poisoning.

The lectures are supplemented by a Practical Course of laboratory work on Fridays, at 2 p.m.

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### MENTAL DISEASES.

*Professor:* E. B. WHITCOMBE, M.Sc., M.B., Ch.B.; M.R.C.S.

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*Lecture Days.*—During the Summer Session, Tuesdays and Thursdays, at 2 p.m.

The Course will consist of an account of the various forms of Mental Disease, including their history, etiology, pathology, symptoms, and treatment. Illustrations of living examples, and pathological specimens will be utilised as far as possible. The medico-legal aspect of insanity will be included in the course.

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### OPERATIVE SURGERY.

*Professor:* JORDAN LLOYD, M.Sc., M.D., Ch.B.; M.B., M.S. (Durh.), F.R.C.S.

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A class of Operative Surgery, consisting of at least ten demonstrations, is held each Winter, after Christmas. All the chief operations in surgery are performed on the dead body by the Professor, and also by members of the Class.

## OPHTHALMOLOGY.

*Professor:* PRIESTLEY SMITH, M.Sc.; M.B., Ch.B., F.R.C.S.

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*Lecture Days.*—Tuesdays and Fridays, at 2 p.m., during the Winter Session (January to March).

These lectures deal systematically with the nature and treatment of the principal diseases of the eye. The several parts of the subject are taken in the following order :—

- Disorders of the Conjunctiva.
- Disorders of the Cornea.
- Disorders of the Uveal Tract : Iritis, Cyclitis, Choroiditis.
- Injuries and Sympathetic Ophthalmia.
- Glaucoma.
- Cataract.
- Disorders of the Retina.
- Disorders of the Optic Nerves, Tracts, and Centres.
- Refraction. Acuteness of Vision. Accommodation.
- Hypermetropia. Myopia. Astigmatism.
- Strabismus and other disorders of the Motor Apparatus.
- Disorders of the Orbit and Lacrymal Apparatus.

In connection with this Course, Clinical demonstrations and practical instruction in the methods of examining the eye, are given in the Eye Department of the Queen's Hospital.

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## INFORMATION CONCERNING HOSPITAL WORK.

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### THE GENERAL AND QUEEN'S HOSPITALS, BIRMINGHAM.

The Practices of these Hospitals are amalgamated for the purpose of Clinical Instruction which is carried on under the direction of the Birmingham Clinical Board. They present an almost unrivalled field for Clinical work, possessing more than **450 Beds**, treating annually **8,000 in-patients** and **80,000 out-patients** and as students spent part of their curriculum in each Hospital, they have every opportunity of acquiring a varied, full, and practical knowledge of their professional work.

The curriculum is adapted in the first place to meet the needs of the students of the Birmingham University, but it is also well adapted to the requirements of students preparing for the examinations of all other Universities and Licensing Bodies.

The advantages that the combined Hospitals offer to students do not cease with graduation, for there is probably no city in which students who have qualified have a larger number of Resident posts open to them.

At the GENERAL HOSPITAL there are:—

A RESIDENT MEDICAL OFFICER, who is elected annually, and has a salary of £70 a year.

A RESIDENT SURGICAL OFFICER, who is elected annually, but is eligible for re-election for three years, at a salary of £100 a year.

A RESIDENT PATHOLOGIST, who is elected for a period of six months, and has a salary at the rate of £50 a year.

Three HOUSE PHYSICIANS, who hold office for six months, and who are provided with board and residence, and have salaries at the rate of £50 a year.

Four HOUSE SURGEONS, who hold office for six months, and who are provided with board and residence, and have salaries at the rate of £50 a year.

Two ASSISTANT HOUSE SURGEONS, who are elected every three months, and are provided with board and residence, and salaries at the rate of £40 a year.

One HOUSE SURGEON to the Gynaecological, Ophthalmic and Aural Departments, who holds office for six months, and is provided with board and residence, and has a salary of £50 a year.

A RESIDENT MEDICAL OFFICER at the Jaffray Hospital, who is elected annually, but is eligible for re-election, and who receives £150 a year.

A RESIDENT MEDICAL ASSISTANT at the Jaffray Hospital, who is not necessarily qualified. He is provided with board and residence, and holds office for three months.

At the QUEEN'S HOSPITAL there are:—

Three House Physicians, who hold office for six months, and have salaries at the rate of £50 a year.

Three House Surgeons, who hold office for six months, and have salaries at the rate of £50 a year.

One Obstetric and Ophthalmic House Surgeon, who holds office for six months. Salary at the rate of £50 a year.

One Resident Dresser (post vacant on the first day of January, April, July, and October, who holds office for three months). Candidates for this appointment need not be qualified.

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At the CITY WORKHOUSE AND WORKHOUSE INFIRMARY.  
Five Resident Medical Officers.

At the BIRMINGHAM GENERAL and BRANCH DISPENSARIES.  
Eight Resident Surgeons.

At the BIRMINGHAM LUNATIC ASYLUMS.  
Five Assistant Medical Officers.

At the CITY FEVER HOSPITALS.  
Three Assistant Medical Officers.

At the CHILDREN'S HOSPITAL.  
One Resident Surgical Officer.  
One Resident Medical Officer.

At the BIRMINGHAM AND MIDLAND EYE HOSPITAL.  
Three Resident Surgeons.

At the ORTHOPÆDIC AND SPINAL HOSPITAL.  
Four Clinical Assistants (non-resident).

At the EAR AND THROAT HOSPITAL.  
One House Surgeon, with a salary at the rate of £70 per annum.  
Four Clinical Assistants (non-resident).

Besides the above-mentioned positions in Institutions in the City of Birmingham, there are numerous resident salaried appointments in the Hospitals in the immediate vicinity which are open to the students of the Birmingham Medical School.

Appointments are also open to Graduates in the Naval, Military, Indian Medical and Colonial Services.

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### HOSPITAL FEES.

THE COMPOSITION FEE for attendance for the full period required by the various examining bodies on the Medical and Surgical Practice and on the Clinical Lectures at both Hospitals is    ...    ...    ...    ...    £42

N.B.—This payment can be made in three instalments of £12, £15, and £15 each—the first on entrance at Hospital, the second at the commencement of the second year, and the third at the commencement of the third year at Hospital.

### OCCASIONAL FEES FOR BOTH MEDICAL AND SURGICAL PRACTICE

One Year's Attendance	...	...	£22 10s.
Six Months'     ,,	...	...	£14.
Three Months'   ,,	...	...	£10.

### OCCASIONAL FEES FOR EITHER MEDICAL OR SURGICAL PRACTICE.

One Year's Attendance	...	...	£11 11s.
Six Months'     ,,	...	...	£7.
Three Months'   ,,	...	...	£5.

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All Hospital fees must be paid at the time of registration to the Secretary of the Clinical Board, who signs all schedules for Clinical work. *Cheques should be drawn in favour of Mr. George Heaton.*

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## REGISTRATION OF HOSPITAL STUDENTS.

Students must register with the Secretary of the Clinical Board at the commencement of their second year, and of every succeeding year. Due notice will be given at the University and at the Hospitals of the days and hours of registration. Fees must be paid at the time of registration.

Students are, on first entering for their Hospital work, allocated in equal numbers to the General and the Queen's Hospitals respectively.

A student remains for one year at one Hospital, and in the next year passes to the other Hospital, and so on until his fifth year, when he may attend whatever classes he chooses at either Hospital, subject to the Regulations.

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## REGULATIONS FOR HOSPITAL WORK.

During the First year there is no Hospital Work.

### SECOND YEAR.

Students must attend Hospital for two hours on Saturday mornings, when a Surgical Tutorial Class will be held, and instruction given in Clinical Surgery.

### THIRD YEAR.

Out-Patient dressing, three months.

In-Patient dressing, six months.

Clinical Lectures on Surgery.

Surgical and Medical Ward Classes.

Medical Tutorial Classes (three months attendance will be required upon these before In-Patient dressing is commenced).

## FOURTH YEAR.

In-Patient clerking, six months.

Clinical Lectures on Medicine.

Medical and Surgical Ward Classes.

Post-mortem clerking, three months. Attendance at post-mortem examinations and demonstrations during the year.

## FIFTH YEAR.

Clinical instruction in Medicine and Surgery.

Clinical Midwifery (twenty cases).

Gynæcological clerking, three months.

Ophthalmology, three months.

Vaccination, six weeks.

Course in Anæsthetics. Attendance on three Lectures, and the administration of Anæsthetics on ten cases.

Fever Hospital, three months.

Hospital for Mental Diseases, three months.



## THE GENERAL HOSPITAL.

The Hospital contains 342 beds, and of these 327 are in daily use, upwards of 5,000 in-patients passing through the wards in the course of a year.

There are special wards for children, for gynaecological cases, and for septic and infectious cases, and in addition special beds reserved for eye and ear cases.

The out-patient hall has accommodation for some 500 or 600 patients, and some 60,000 out-patients are treated there annually.

The Post-mortem Department is in a separate building. It consists of a Mortuary with a small chapel, a Post-mortem Room proper, and Laboratories for Bacteriology and Morbid Histology. In addition there are separate rooms in the main building, adjoining the various Medical and Surgical Wards for Clinical Pathology and these are under the direction of special officers.

There are three Operating Theatres, all designed and fitted on the most modern lines.

In connection with the Hospital is the Jaffray Suburban Hospital at Gravelly Hill. To this institution, which contains 52 beds, the chronic cases are transferred, when fit to be moved. This allows the main Hospital to be kept full of acute cases.

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## THE GENERAL HOSPITAL STAFF.

**Honorary Consulting Physicians:**

SIR WALTER FOSTER, Knt., M.D., D.C.L., LL.D., F.R.C.P., M.P.  
EDWIN RICKARDS, M.A., M.B. (OXON.), F.R.C.P.

**Consulting Obstetric Officer:**

EDWARD MALINS, M.D., F.R.C.P.

**Honorary Physicians:**

ROBERT SAUNDBY, M.D., LL.D., M.Sc., F.R.C.P.  
ROBERT M. SIMON, M.D. (CANTAB.), F.R.C.P.  
T. STACEY WILSON, M.D., M.R.C.P.  
T. SYDNEY SHORT, M.D., M.R.C.P.

**Honorary Surgeons:**

SIR THOMAS F. CHAVASSE, Knt., M.D., F.R.C.S.  
GILBERT BARLING, M.B., B.S., F.R.C.S.  
WILLIAM F. HASLAM, F.R.C.S.  
GEORGE HEATON, M.A., M.B., B.Ch. (OXON.), F.R.C.S.

**Honorary Obstetric Officer:**

THOMAS WILSON, Ch.M., M.D.

**Honorary Ophthalmic Surgeon:**

D. C. LLOYD-OWEN, M.D., F.R.C.S.I.

**Honorary Aural Surgeon and Laryngologist:**

F. W. FOXCROFT, M.D., C.M.

**Physician in Charge of Skin Department:**

A. DOUGLAS HEATH, M.D., M.R.C.P.

**Assistant Physicians:**

JAMES W. RUSSELL, M.A., M.D., F.R.C.P. ALBERT LUCAS, F.R.C.S.  
A. STANLEY BARNES, M.D., M.R.C.P. LEONARD P. GAMGEE, F.R.C.S.

**Assistant Surgeons**

## ARRANGEMENTS FOR CLINICAL TEACHING.

### I. - MEDICINE.

THE MEDICAL WARDS are visited daily by the Physicians and instruction is given by them to the students who accompany them.

CLINICAL WARD CLERKS are selected every three months for duty in the wards. They are aided by the House Physicians in note taking and in clinical diagnosis.

CLINICAL LECTURES on cases in the Hospital wards are delivered by one of the Physicians once every week, on Mondays, at 10.30 a.m.

SPECIAL WARD CLASSES for Senior students are taken on Tuesdays and Wednesdays, at 10.30 a.m., by one of the Physicians throughout term time.

#### Medical Tutorial Classes.

THE SENIOR MEDICAL TUTOR, Dr. Russell, holds a class weekly on Wednesdays, at 12 o'clock, for students reading for their Final Examinations.

THE JUNIOR MEDICAL TUTOR, Dr. Stanley Barnes, holds two classes weekly, on Tuesdays and Fridays, at 12 o'clock, for students before they commence to clerk in the wards.

An Assistant Physician and a Casualty Assistant Physician attend daily in the Out-patient Department and give clinical instruction.

### II.—SURGERY.

The Surgical Wards are visited daily by the Surgeons, who give clinical instruction to students who accompany them.

Surgical In-patient Dressers are appointed every three months. They are attached in equal numbers to

each Surgeon, accompany him on his rounds, assist at the surgical operations, and, under the direction of the House Surgeons, dress the cases in the wards.

A CLINICAL LECTURE is delivered every Thursday morning during term time, at 9.30, by one of the Visiting Surgeons, on some case of interest in the wards.

SENIOR WARD CLASSES are held on Monday and Friday mornings, at 9.30, during term time by one of the Surgeons.

A JUNIOR WARD CLASS is also held once a week, on Saturdays, by Mr. Haslam or Mr. Heaton, for students in their first year of attendance at Hospital.

One of the Assistant Surgeons and a Casualty Assistant Surgeon attend daily in the Out-patient Department, the student learns the diagnosis and treatment of minor surgical ailments, and has an opportunity of dressing in the Casualty Department, where an immense number of accidents are attended to.

TUTORIAL CLASSES.—The Senior Surgical Tutor, Mr. Gamgee, holds a class once a week for students reading for their Final Examinations, and the Junior Surgical Tutor, Mr. Frank Barnes, holds a class for Junior students before they enter the Surgical wards.

### III.—THE SPECIAL DEPARTMENTS.

#### Gynæcology.

Dr. Thomas Wilson gives clinical instruction in the wards and in the Out-patient Department, and a Clinical Lecture is given once a month, on Mondays, at 10.30 a.m. Senior students are appointed as clerks every three months.

THE GYNAECOLOGICAL TUTOR, Dr. Hewetson, holds a class for Senior students on Tuesdays, at 12.0.

Surgical operations are performed daily from 10 to 1 in the two main Operating Theatres. The large ex-

perience to be gained from this source may be gathered from the fact that during last year more than 3,500 operations were performed.

#### Aural and Laryngological Department.

This department is under the charge of Dr. F. W. Foxcroft, who attends twice weekly to see out-patients. Demonstrations of Diseases of the Ear and Throat are given every Friday, at 10.30 a.m., during term time.

#### Department for Diseases of the Skin.

The Department for the treatment of Diseases of the Skin is under the care of Dr. Douglas Heath, who attends twice weekly, on Tuesdays and Fridays, and gives Demonstrations on Skin cases.

#### X Rays and Light Treatment Department.

This Department is under the charge of Mr. Hall-Edwards, who attends daily at noon. It includes all the various methods of investigating and treating disease by means of electricity, and there is an installation for the treatment of Skin Diseases by the Finsen Rays.

#### Ophthalmic Department.

Ophthalmic cases are seen on Thursdays by Mr. Lloyd Owen as out-patients. Cases requiring operation are admitted into beds in the Hospital specially reserved for such cases.

#### Dental Department.

There is an Out-patient Dental Department, under the charge of Mr. A. T. Hilder, L.D.S., who attends on Wednesday and Saturday mornings. Students are given instruction in the manufacture of the various Dental appliances required after injuries and surgical operations.

#### Pathological Department.

This Department is under the charge of the Visiting Pathologist. There are also two annually elected Clinical Pathologists, and a Resident Pathologist.

Students are appointed as clerks for periods of three months, and work in the Pathological Laboratories under the superintendence of the Visiting and Resident Pathologists.

Chemical and Bacteriological investigation of material from the wards is carried out by the Medical and Surgical Clinical Pathologists, who have a complete equipment for that purpose.

#### Anæsthetics.

Each term instruction classes in the Administration of Anæsthetics are held by one of the Anæsthetic Officers. After attending these, each student has the opportunity of administering anæsthetics under superintendence in a given number of cases, and thus of practically learning the administration.

### THE QUEEN'S HOSPITAL.

The Hospital contains 132 beds (shortly to be increased by the erection of a new building to 160), distributed in wards arranged for the treatment of accidents, and of urgent medical, surgical, gynaecological and ophthalmic cases; a special ward being reserved for children. During 1906 the in-patients treated numbered 2,307, and the out-patients 34,213.

The Out-patient Consulting Rooms and Casualty Dressing Rooms are grouped conveniently around the Out-patient Hall, and are in daily use.

The Operating Theatre is well lighted and thoroughly well appointed to meet the requirements of aseptic surgery. In connection with it is a room installed with the apparatus for radiography.

The Pathological Department is an isolated block under the charge of the Pathologist, who is a member of the Honorary Staff. It comprises a post-mortem room, mortuary, and laboratories for bacteriology and general pathology. There is also a clinical room in the main building provided with microscopes and other apparatus for routine clinical pathology.

## THE QUEEN'S HOSPITAL STAFF.

### **Consulting Physicians:**

SIR JAMES SAWYER, KNT., M.D., F.R.C.P., F.R.S.E.  
 CORNELIUS W. SUCKLING, M.D., M.R.C.P.  
 ALFRED H. CARTER, M.D., F.R.C.P.

### **Consulting Surgeons:**

FURNEAUX JORDAN, F.R.C.S.	BENNETT MAY, B.S., F.R.C.S.
FRANK MARSH, CH.M., F.R.C.S.	

### **Consulting Ophthalmic Surgeon:**

PRIESTLEY SMITH, F.R.C.S.

### **Physicians:**

ARTHUR FOXWELL, M.A., M.D., F.R.C.P.  
 O. J. KAUFFMANN, M.D., M.R.C.P.  
 J. DOUGLAS STANLEY, M.D., M.R.C.P.

### **Surgeons:**

JORDAN LLOYD, M.S., F.R.C.S.  
 J. T. J. MORRISON, M.A., B.C., F.R.C.S.  
 C. A. LEEDHAM-GREEN, CH.M., F.R.C.S.

### **Ophthalmic Surgeon:**

WILFRID ALLPORT, M.B., B.S.      C. E. PURSLOW, M.D., M.R.C.P.

### **Obstetric Officer:**

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## ARRANGEMENTS FOR CLINICAL TEACHING.

### I.—MEDICINE.

MEDICAL WARD CLERKS are appointed from the Third Year students for terms of three and six months. They are attached to one of the Physicians, who directs their studies and gives practical instruction to them and to all other students who accompany him on his Hospital rounds. The clerks are also greatly helped by the House Physicians in practical methods of diagnosis and in note-taking.

CLINICAL LECTURES are given in rotation by the Physicians on Thursday mornings, at 9.30.

WARD CLASSES are conducted by the Physicians each term at 10.30 on Mondays, Wednesdays, and Fridays.

TUTORIAL CLASSES are held at 12 o'clock on Tuesdays and Fridays by one of the Physicians to out-patients. The Tuesday class is designed for Clerks and Dressers; the Friday class for students preparing for the Final Examinations.

OUT-PATIENT CLINIC.—Members of the Medical Staff attend daily (except Saturday) to see out-patients, and they give clinical instruction on the cases.

### II.—SURGERY.

SURGICAL DRESSERS are appointed every three months for duty in the wards. They are allotted to one of the Surgeons for terms of three or six months; they accompany him, with other students, when he visits the Hospital to see his patients and give instruction; and they assist at operations. Under the supervision of the House Surgeons they prepare notes and dress such cases as may be assigned to them.

CLINICAL LECTURES are given in rotation by the Surgeons on Friday mornings, at 9.30.

A WARD CLASS is conducted every Thursday morning at 10.30, by Mr. Morrison; and every Monday at 9.30 by Mr. Leedham Green.

TUTORIAL CLASSES are held by one of the Surgeons to out-patients on Mondays, at 12, and Saturdays, at 9.30 a.m.; the former class is designed for students in their last year; the latter for Out-patient Dressers.

SPECIAL CLASSES FOR FIRST YEAR STUDENTS are held on Saturdays, at 9.30 a.m., by one of the Surgeons, and on the same day, at 10.30 a.m., by one of the Surgeons to Out-patients, the former in the wards, and the latter in the Out-patient Room.

OUT-PATIENT CLINIC.—One of the Surgeons and one of the Surgeons to Out-patients attend daily to see surgical out-patients and casualties, except on Saturday, when only casualty cases are seen. In these departments the student has an abundant field for surgical study and practice under the tuition of the Staff.

### III.—GYNÆCOLOGY.

CLERKS IN THE GYNÆCOLOGICAL DEPARTMENT are appointed every three months from the Senior students. They attend Dr. Purslow in his ward and Out-patient Room, and assist at operations. It is part of their duty also to take notes under the direction of the House Surgeon.

CLINICAL LECTURES are given by Dr. Purslow on Wednesdays, at 11.30 a.m., during the first half of the Winter Session.

OUT-PATIENT CLINIC AND OPERATIONS.—Dr. Purslow attends at 9 a.m. on Mondays and Thursdays to see out-patients and to give instruction to those students who are present; and Gynæcological operations are performed by him on Saturdays, at 9.30 a.m.

#### IV.—OPHTHALMOLOGY.

CLERKS IN THE OPHTHALMIC DEPARTMENT are appointed every three months. They attend Mr. Allport in the Out-patient Room and wards, take notes of the cases, and assist at operations.

CLINICAL DEMONSTRATIONS are given by Mr. Priestley Smith and Mr. Allport on Wednesdays, at 9.30 a.m.

OUT-PATIENT CLINIC AND OPERATIONS.—Mr. Allport attends on Tuesdays and Fridays, at 9 a.m., to see out-patients and to give Clinical instruction to students; and operations on cases of eye disease are performed by him on Saturdays, at 11.30 a.m.

#### V.—PATHOLOGY.

CLERKS IN THE PATHOLOGICAL DEPARTMENT are appointed every three months, and under the direction of the Pathologist they make post-mortem examinations and carry out bacteriological, microscopical, and chemical work in the laboratories, and keep records.

DEMONSTRATIONS are specially given by the Pathologist on Saturdays, at 10 a.m.

AUTOPSIES are conducted by the Pathologist, and instruction is given by him to the students attending the inspection.

#### VI.—MIDWIFERY.

Midwifery cases are assigned for attendance in the Queen's Hospital Maternity District, under the supervision of the Honorary Obstetric Officer and the Obstetric House Surgeon.

Before attending practical midwifery, students must have passed their Anatomical and Physiological Examinations.

They must conform to the Queen's Hospital bye-laws which relate to the work of its Midwifery Department.

Students must apply in the first place to the Secretary of the Clinical Board, who will furnish them with a "Clinical Midwifery Card," which shall be signed by the Obstetric Officer on the completion of the duties, and returned.

They shall not be engaged in Surgical Dressing, Post-mortem, or Dissecting Room work during the time of their attendance.

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### CLINICAL BOARD REGULATIONS.

Appointment of Resident Clinical Assistant at the Jaffray Hospital and Resident Dresser at the Queen's Hospital.

These posts are awarded by examination.

The Examinations are only open to students taking out the whole of their clinical course at the School of Medicine of the University of Birmingham.

The Resident Dresser at Queen's Hospital is at liberty to attend lectures at the University in the afternoons. Students before competing must be certified for at least three months' in-patient clerking and three months' in-patient dressing, but they must not have exceeded the limit of the five years' curriculum. The possession of a recently-obtained qualification is not a bar to the holding of either of these appointments.

The Clinical Assistant at the Jaffray Hospital is also allowed time to attend lectures.

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## CLINICAL PRIZES.

The following Prizes are given annually by the Clinical Board :—

Senior Medical Prize, for students during their final year, to the value of ...	... £5 5s.
Senior Surgical Prize, ditto	... £5 5s.
Junior Medical Prize, for students before the commencement of their final year, to the value of ...	... £3 3s.
Junior Surgical Prize, ditto	... £3 3s.
Midwifery Prize, for students during their final year, to the value of	... £4 4s.

These Prizes are awarded at the end of the Summer Session, and are open to students registered by the Clinical Board, who have attended not less than one Six Months' Course of Medical or Surgical Lectures at the University.

For the SENIOR MEDICAL PRIZE, every candidate must produce a certificate of having held the office of Clinical Clerk in either the General or the Queen's Hospital for a period of *six* months; and must deliver to the examiners notes of *four* medical cases which have been personally observed and reported by him during his clerkship, the same to be certified to by the initials of the Physician under whose care the cases were placed. The examination will include a paper of *four* questions on the Principles and Practice of Medicine; a written diagnosis of *two* living cases, with grounds for the same; together with such additional evidence of a practical knowledge of Medicine as the examiners for the time being shall require.

For the JUNIOR MEDICAL PRIZE, every candidate must produce a certificate of having held the office of Clinical Clerk in either the General or the Queen's Hospital for a period of *three* months. The examination will include a paper of *four* questions on the Principles of Medicine; together with such evidence of a practical knowledge of

the methods of physical examination, and of the names, uses, and methods of employment of common drugs, remedies, instruments, and apparatus, as the examiners for the time being shall require.

For the SENIOR SURGICAL PRIZE, every candidate must produce a certificate of having held the office of Surgical Dresser in either the General or Queen's Hospital for a period of *six* months; and must deliver to the examiners notes of *four* surgical cases which have been personally observed and reported by him during his dressership, the same to be certified to by the initials of the Surgeon under whose care the cases were placed. The examination will include a paper of *four* questions on the Principles and Practice of Surgery; the written diagnosis of *two* living cases, with grounds for the same; together with such additional evidence of a practical knowledge of Surgery as the examiners for the time being shall require.

For the JUNIOR SURGICAL PRIZE, every candidate must produce a certificate of having held the office of Surgical Dresser in the General or Queen's Hospital for a period of *three* months. The examination will include a paper of *four* questions on the Principles of Surgery; together with such evidence of the names, uses, and methods of employment of common surgical instruments, bandages, and apparatus, as the examiners for the time being shall require.

For the MIDWIFERY PRIZE every candidate must produce a certificate of having personally attended at least *ten* cases of Midwifery, and also a certificate of having attended the Out-patient Gynæcological Department at either the General or the Queen's Hospital for *three* months. The examination will include a paper of *two* questions on Diseases peculiar to Women, and *two* questions on the Principles and Practice of Midwifery; together with a practical examination of such a kind as the examiner for the time being shall determine.

Notice of intention to compete for the above Prizes must be communicated to one of the Honorary Secretaries of the Clinical Board at least *seven days* before the day of examination.

In no case will any Prize be awarded unless at least *seventy per cent.* of the total possible number of marks be obtained.

A professional qualification obtained during the Summer Session *immediately* preceding these examinations does not—*per se*—disqualify a candidate.

#### INFORMATION FOR STUDENTS ATTENDING THE HOSPITALS.

(See also page 504.)

1. The arrangements for Clinical Teaching are, as far as possible, conducted at both Hospitals on the same plan.
2. The recognised hours for Hospital attendance of students are from 9 a.m. to 1 p.m. daily.
3. The Teaching provided consists of :

1, Clinical Lectures in the theatre or lecture rooms ;  
2, Clinical Instruction in the Wards ; 3, Tutorial Classes ; 4, Pathological Demonstrations.

The first three forms are given by the Members of the Honorary and Assistant Staffs. The Tutorial Classes are conducted by Special Tutors selected for that duty.

4. Clinical Instruction is given in the Medical or Surgical Wards daily, but not during the hour set apart for the Clinical Lectures.
5. Registers of attendance on Clinical Lectures and Tutorial and Ward Classes are kept. Cards are supplied to Final year students, on which each individual attendance will be certified by the teacher.

6. During the First year of the Medical Curriculum, attendance at Hospital is not recognised.

During the Second year of the Medical Curriculum students should attend a Surgical Tutorial Class at the Hospital once a week. [This course is not compulsory on Candidates for the Diplomas of the English and Scotch Conjoint Boards, and will, under no circumstances, be reckoned as one of the years required by the Schedules of the above-mentioned bodies; all students are, however, strongly advised to attend this course during this year.]

During the Third year of the Medical Curriculum students should attend :

*a*, Clinical Lectures on Surgery ; *b*, Medical and Surgical Ward Classes ; *c*, Surgical Dressing (including three months Out-Patient and six months In-Patient Dressing) ; *d*, Medical Tutorial Classes.

N.B.—These must be attended for three months before In-Patient Dressing is commenced.

(No student will obtain credit for this year of Hospital work unless he has previously passed his Anatomical and Physiological Examinations.)

During the Fourth year of the Medical Curriculum students should attend :

*a*, Clinical Lectures on Medicine ; *b*, Medical and Surgical Ward Classes ; *c*, Medical Clinical Clerking for six months ; *d*, Clinical Gynaecology ; *e*, Post-mortem Clerking. The student must also attend Post-mortem Examinations and Demonstrations during the year.

During the Fifth year of the Medical Curriculum students should attend :

\* *a*, Clinical Instruction in Medicine and Surgery (during this year students are at liberty to attend these subjects at either Hospital, *vide* Reg. 3, p. 96) ; *b*, Clinical Ophthalmology (three months) ; *c*, Vaccination ; *d*, Fever Hospital (three months) ; \* *e*, Lunatic Asylum (three months) ; *f*, Clinical Midwifery (twenty cases) ; *g*, Gynaecological Clerking (three months) ; *h*, Instruction in Anaesthetics, consisting of attendance at three Lectures and the personal administration of Anaesthetics in ten cases.

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\* The subjects *a* and *e* must be attended during the final year.

7. Students holding the appointments of Medical Clinical Clerk, or Surgical Dresser, are exempt from Ward Classes in Medicine and Surgery on the days on which their services are required by the Officer under whom they are working.

8. The following Syllabus of Instruction is followed in the Tutorial Classes for Elementary Medicine and Surgery :

MEDICINE: Physical Examination. *Winter*—1, Temperature; 2, Integumentary System; 3, Circulatory System; 4, Respiratory System; 5, Alimentary System; *Summer*—6, Nervous System; 7, Urinary System; 8, The use of the Ophthalmoscope, Laryngoscope, and Aural Speculum.

SURGERY: *Winter*—1, Bandaging; 2, Strapping; 3, Application of Splints; 4, Minor Injuries; 5, Wound Dressing and Wound Treatment; 6, Haemorrhage, Haemostasis, Tourniquets; 7, Artificial Respiration. *Summer*—8, Minor Operations; Catheterisation, Plugging the Nares; Hypodermic Injection, Removal of Foreign Bodies from the Eye, Ear, and Oesophagus; 9, Shock, Fainting, Stings, Leeching, Counter-irritation; 10, Surface Landmarks and Guides.

#### GENERAL REGULATIONS.

1. Every student is required to register his name for Hospital Practice within fifteen days of the commencement of the Winter Session.

2. Clinical fees must be paid at the time of registration, to Mr. George Heaton, who will attend at the General Hospital on Mondays and Thursdays at 12 noon to give all information relating to Hospital Practice.

3. Students must attend twelve months alternately at the General and Queen's Hospitals, as directed at the time of registration, but during their final year they may attend at either or both Hospitals.

4. Students who enter for a term of six months or less may choose which Hospital they will attend.

5. All students registering for Hospital Practice are required to attend at least *two-thirds* of the Classes for which they register.

6. Students referred at their Final Examinations must register with the Hon. Secretary of the Clinical Board for any further attendance they may require.

By order of the Birmingham Clinical Board.

ROBERT SAUNDBY, *President.*

GEO. HEATON, | *Hon. Secs.*  
J. T. J. MORRISON, |

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## ASSOCIATED HOSPITALS.

The undermentioned Institutions are open to the students of the University free (with the exception of the City Fever Hospital and the City Asylum), under the following regulations, which have been approved by the Council.

1. That it be recognised that students attending such Hospitals do so upon the understanding that, except in the case of the City Fever Hospital and the City Asylum, such attendance is in no way to supersede or be considered as equivalent to attendance at the General and Queen's Hospitals.

2. That students who have diligently attended Courses at such Hospitals be, on the recommendation of the staff of any such Hospital, awarded special certificates, such certificates to be signed by the Chairman and Secretary (or other official) of the Medical Board of such Hospital, and countersigned by the Dean on the part of the University.

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**THE CITY FEVER HOSPITAL, LODGE ROAD.**

*Medical Superintendent:*

EUGENE CHATELIER, M.B., C.M. (Edin.).

This Institution is recognised by all the Licensing Bodies as a Fever Hospital at which attendances may be made.

Courses of Instruction are given during the Winter Session *only*, viz.: October to December and January to March, on Saturdays at 11.30 a.m., commencing on the third Saturday in October and January respectively.

The following Regulations have to be observed:—

1. Every student while within the gates of the Hospital shall be subject to the control of the Medical Superintendent, who has authority to suspend him from further attendance in case of breach of discipline.
2. He shall strictly adhere to the regulations made from time to time with regard to disinfection.
3. He shall not visit any ward except in the company of the Medical Superintendent or his deputy.
4. A register shall be kept at the Hospital, in which shall be entered the name of every student and the number of his attendances.
5. The minimum duration of any course of instruction shall be three months, the hours of attendance to be fixed by the Medical Superintendent.
6. A certificate, to be signed by the Medical Superintendent, shall be granted to each student when he shall have satisfactorily completed his course of study.
7. The fee for each course is *Two Guineas* for the first three months, and *One Guinea* for each additional month or part of a month, payable in advance to the Medical Superintendent.
8. These rules shall apply equally to legally qualified medical men, who may desire to attend the Hospital for the purpose of clinical instruction.

**THE CITY ASYLUM, WINSON GREEN.**

*Medical Superintendent:*

E. B. WHITCOMBE, M.Sc.; M.B., Ch.B., M.R.C.S.

This Institution is recognised by all the Universities and Licensing Bodies as a Hospital at which attendance may be made in the subject of Mental Disease. By the regulations of British Universities and other Bodies, such attendance may count towards the requisite period of Clinical study. Courses of instruction are given on Saturdays at 10 a.m., in the months of January, February, March, April, May and June, commencing on the third Saturday in January and April.

All students wishing to attend must make application at least one week previously.

The minimum number of attendances is *eight*, and no certificate will be granted unless that number has been attended.

A Fee of £3 3s. for three months' attendance has to be paid to Mr. Whitcombe, to whom application must be made for further information.

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**BIRMINGHAM AND MIDLAND EYE HOSPITAL.***Honorary Consulting Physician:*

R. SAUNDBY, M.D., F.R.C.P., LL.D.

*Honorary Consulting Surgeon:*

D. C. LLOYD-OWEN, M.D., Ch.B., F.R.C.S.I.

*Surgeons:*

H. EALES, M.R.C.S.

E. W. WOOD-WHITE, B.A., M.D., B.Ch.

J. JAMESON EVANS, M.D.; C.M., F.R.C.S. (*Hon. Sec. to the Medical Board.*)*Dental Surgeon:*

W. T. MADIN, L.D.S.

*Anæsthetist:*

S. W. HAYNES, M.D.

This Hospital possesses 105 beds, and there is an average daily attendance of out-patients of 210.

This Institution is recognised by Universities and the Royal College of Surgeons, England, and Royal College of Physicians, London, as an Ophthalmic Hospital at which clinical instruction in Ophthalmology may be received. The Medical Staff give instruction on Refraction, Ophthalmoscopy, External Diseases of the Eye and Ocular Pathology at 9 a.m. daily, or at other times by arrangement. Students attending for a period of three months will be granted Certificates which will qualify for the University and Conjoint Board Examinations.

*Days of Attendance:*

Mr. EALES - - Tuesday and Friday.

Mr. WOOD-WHITE - Monday and Thursday.

Mr. JAMESON EVANS - Wednesday and Saturday.

Out-patients are seen daily at 9 a.m.

Operations daily at 11 a.m.

Further information may be obtained from the Hon. Secretary of the Medical Board.

**THE ROYAL ORTHOPÆDIC AND SPINAL HOSPITAL.**

*Honorary Consulting Physician :*

C. W. SUCKLING, M.D., M.R.C.P.

*Honorary Consulting Surgeons :*

CHARLES WARDEN, M.D., F.R.C.S. (Edin.).  
AUGUSTUS CLAY, M.R.C.S.

*Honorary Surgeons :*

WILLIAM THOMAS, M.B., F.R.C.S.

WM. EDWARD BENNETT, M.B., Ch.B., F.R.C.S.

FRANK BARNES, M.B., M.S., Lond., F.R.C.S. (*Hon. Sec. to the Medical Committee*).

*Anæsthetist :*

WALTER R. JORDAN, M.D., Lond.

*Qualified Clinical Assistant :*

W. A. L. HOLLAND, M.R.C.S., L.R.C.P.

Accommodation for 30 In-patients.

*Days of Attendance. (Out Patients.)*

Mr. WM. THOMAS - - Monday and Friday, at  
2.30 p.m.

Mr. WM. EDWD. BENNETT Tuesday and Thursday, at  
2.30 p.m.

Mr. FRANK BARNES - - Wednesday, at 2.30 p.m.  
Saturday, at 12 noon.

Operations, Tuesday and Friday, at 9 a.m.

CLINICAL ASSISTANTS are appointed for three months from third year students. A Certificate will be granted to each student who satisfactorily performs the duties of the office.

Clinical Instruction is given by the Honorary Surgeons at the above-mentioned hours of attendance.

Further particulars may be obtained from the Secretary to the Medical Committee.

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## BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.

*Honorary Consulting Physician :*

JAMES W. RUSSELL, M.A., M.D., F.R.C.P.

*Honorary Consulting Surgeons :*

JOHN ST. S. WILDERS, M.R.C.S.

CHARLES WARDEN, M.D., F.R.C.S. (Edin.).

*Surgeons :*

C. J. LEWIS, M.D.

WILLIAM LAMB, M.D., C.M., M.R.C.P.

*Honorary Assistant Surgeons :*

WILFRED GLEGG, M.D., C.M., M.R.C.P. (Edin.), *Hon. Sec. Medical Board.*

SEYMOUR JONES, F.R.C.S.

*Days of Attendance :*

Monday -	-	Dr. LAMB	}	9 30 to 11 a.m.
Tuesday -	-	Dr. GLEGG		
Wednesday -	-			
Thursday -	-	Dr. LEWIS		
Friday -	-	Mr. SEYMOUR JONES		

The Hospital has 41 Beds in occupation.

A Resident House Surgeon is appointed every twelve months, at a salary of £70 per annum, and he is eligible for re-election. Rooms, Board and washing are provided in the Hospital.

Candidates for the post must possess a registered qualification in Medicine and Surgery, and will be required to devote their whole time to the service of the Hospital. There is ample time for reading. Further particulars may be obtained from the Secretary of the Hospital, Edmund Street.

Practical instruction and demonstrations are given to Practitioners and Medical Students from 9.30 to 12 a.m. daily.

Fees for attending the Practice of the Hospital:—  
Practitioners, one month one guinea; three months two  
guineas; Medical Students, free.

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**THE BIRMINGHAM AND MIDLAND FREE HOSPITAL  
FOR SICK CHILDREN.**

*Physicians:*

GEORGE WM. POWELL, M.B.

WALTER R. JORDAN, M.D.

DOUGLAS STANLEY, M.D., M.R.C.P.

*Surgeons:*

GEORGE HEATON, F.R.C.S.

L. P. GAMGEE, F.R.C.S.

C. LEEDHAM GREEN, F.R.C.S.

*Physicians for Out-Patients:*

J. G. EMANUEL, M.D., M.R.C.P.

J. E. H. SAWYER, M.D., M.R.C.P.

*Surgeons for Out-Patients:*

F. V. MILWARD, F.R.C.S.

A. W. NUTHALL, F.R.C.S.

*Ophthalmic Surgeon:*

J. MARTIN YOUNG, M.B., C.M.

*Dental Surgeon:*

C. H. HOWKINS, M.R.C.S., L.D.S.

*Days of Attendance:*

Monday - Dr. STANLEY.

Tuesday - Dr. JORDAN and Mr. HEATON.

Wednesday Dr. POWELL and Dr. STANLEY.

Thursday - Mr. LEEDHAM GREEN.

Friday - Dr. JORDAN, Dr. STANLEY, and Mr. GAMGEE.

**CLINICAL INSTRUCTION.**—Ward classes are held once a week during term by the Physicians on the days and hours announced upon the Notice-boards of the University and Hospitals.

THE FOLLOWING INSTITUTIONS ARE RECOGNISED BY  
THE UNIVERSITY FOR GENERAL AND SPECIAL  
CLINICAL INSTRUCTION.

FOR GENERAL CLINICAL PURPOSES.

The General Hospital.

The Queen's Hospital.

FOR FEVERS.

The Birmingham City Hospital.

FOR LUNACY.

The Birmingham City Asylum.

FOR OBSTETRICS.

The Obstetric Department of the Queen's Hospital.

The Rotunda Hospital, Dublin.

The Coombe Hospital, Dublin.

FOR OPHTHALMOLOGY.

The Eye Department of the Queen's Hospital.

The Birmingham and Midland Eye Hospital.

ASSOCIATED HOSPITALS.

The Royal Orthopaedic and Spinal Hospital.

The Birmingham and Midland Ear and Throat  
Hospital.

The Birmingham and Midland Free Hospital for  
Sick Children.

FOR DENTAL HOSPITAL PRACTICE.

The Birmingham Dental Hospital.

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## VACCINATION.

Dr. E. ROBINSON, 213, Bristol Road,  
*Public Vaccinator.*

Birmingham Teaching Station at Priory Rooms.  
(Opposite Fire Station.)

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*Regulations according to the Instructions of the Local  
Government Board for 1907—1908.*

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### THREE COURSES OF INSTRUCTION WILL BE GIVEN:

- 1st.—Commencing the second Monday in October.
- 2nd.—Commencing the third Monday in January.
- 3rd.—Commencing the second Monday in May.

An attendance book is provided, wherein every attendance is registered by the signature of the pupil, with other details.

The course of instruction consists of at least six demonstrations and addresses, and it is requisite that the pupil attend during six consecutive weeks.

The Class commences punctually at 1.30 p.m. each day, at which time the Register will be open.

FEE: £1 11s. 6d., payable to Dr. ROBINSON, on entrance.

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## LIBRARY OF THE BIRMINGHAM MEDICAL INSTITUTE.

By the courtesy of the Committee of the Medical Institute, students of the Faculty of Medicine are admitted to read in the Library of the Institute under the following conditions.

1. Admission is confined to:—

- (a) 3rd, 4th, and 5th years' students.
- (b) 1st and 2nd years' students reading for higher examinations.
- (c) Sons of Members of the Institute, of any year, whether reading for higher examinations or not.

Classes *a* and *b* must apply to the Dean of the Medical Faculty for a card of recommendation, which they must send, together with their letter of application, to the Hon. Secs. of the Institute. Class *c* must apply direct to the Hon. Secs.

2. Students are only admitted to the Library Hall, and *not* to the Reading Room or the Smoking Room.

3. It is understood that the Hall is not to be used for the reading of text-books.

4. Each student will receive a printed ticket of admission from the Librarian. He must show this whenever required, and must get it renewed every year.

## CONVERSAZIONE.

To inaugurate the opening of the Winter Session on October the 1st, a Conversazione is held in the buildings of the Medical Faculty, when the various Laboratories and Museums are open for inspection, and Exhibitions and Demonstrations are given by members of the teaching staff.

## DENTAL DEPARTMENT.

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### THE DENTAL CURRICULUM.

The teaching of Dentistry is undertaken by the University, acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board.

Special Courses of instruction are provided in connection with the Faculty of Medicine of the University for the whole of the Dental Curriculum.

The courses of instruction qualify not only for the Degrees and Diploma of the University of Birmingham, but for the Diplomas in Dental Surgery of all Licensing Bodies.

It is strongly recommended that students taking out their courses of study in the University of Birmingham should take the Dental Degrees or License of that University for which the University courses of study are specially designed; but students may, if they so desire, also prepare in this University for the examinations of other Licensing Bodies.

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THE DENTAL CURRICULUM may be divided into (1) Preliminary Education, (2) Mechanical Dentistry, (3) Professional and Hospital Study.

PRELIMINARY EXAMINATION.—In order to be registered as a Dental Student, one of the preliminary examinations fulfilling the requirements of the General Medical Council must be passed. Students preparing for the Degree in Dental Surgery must pass the Matriculation Examination or its equivalent.

REGISTRATION AS A DENTAL STUDENT should be effected as soon as a recognised Preliminary Examination has been passed. Forms of Registration may be had on application to the Registrar of the General Medical Council, 299, Oxford Street, London.

MECHANICAL DENTISTRY.—The student devotes two years to instruction in Dental Mechanics in the Mechanical Laboratory of the Dental Hospital, or under the direction of a Registered Dental Surgeon.

Any part of the period (two years) required for instruction in Mechanical Dentistry may be taken prior to registration, but this does not in any way lessen the period of professional study *which must be taken after registration as a Dental Student.*

Before admission to the Final Examination for a Diploma in Dental Surgery, the candidate must produce evidence of having been engaged in the acquirement of professional knowledge during four years, and for the degree of Bachelor of Dental Surgery during five years, subsequent to the date of registration as a Dental Student.

PROFESSIONAL AND HOSPITAL STUDY.—This part of the curriculum extends over at least two years, and comprises :—

- (1) Lectures and Practical Classes in the Medical School ;
- (2) Special Dental Lectures and Dental Hospital Practice ;
- (3) General Hospital Practice.

Particulars relating to the course of instruction at the University may be had from the Hon. Secretary of the Dental Department at the University.

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## ENTRANCE SCHOLARSHIP FOR DENTAL STUDENTS.

1. One Scholarship is offered annually of the value of £37 10s.
  2. It is awarded to the student who, entering for the Dental Degree of the University in October, or having entered not earlier than the previous April, shall pass the best examination in the subjects studied during his apprenticeship.
  3. Candidates must be under the age of twenty-one years.
  4. Application for admission, together with a certificate of birth, must be sent to the Dean of the Medical Faculty on or before October 12th.
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## CLINICAL INSTRUCTION.

The General and Queen's Hospitals offer every advantage for the study of general Surgery and Medicine, the arrangements for which are carried out under the direction of the Birmingham Clinical Board. Special classes for Dental students are held in Clinical Medicine and Clinical Surgery, and Tutorial Classes are arranged for Junior and Senior Dental Students at both Hospitals.

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## REGULATIONS FOR DEGREES IN DENTAL SURGERY.

1. The Degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.).
2. All candidates for these Degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees.

3. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained the License in Dental Surgery of the University, or from some body legally entitled to confer such qualification. The candidate is not eligible for the Degree until a period of twelve months has elapsed from the passing of his examination for the License in Dental Surgery. Of this period at least six months must be spent in the Dental Department of a General Hospital approved by the University.

4. A. In addition to the License in Dental Surgery the candidate must produce evidence that he has attended the Courses required by Medical Students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees :—

- (a) Chemistry, and Practical Chemistry.
- (b) Physics, and Practical Physics.
- (c) Elementary Biology.
- (d) Anatomy, and Practical Anatomy.
- (e) Physiology, and Practical Physiology.

B. That he has attended the following Courses, and passed the class examinations held in each of these subjects.

- (f) One Special Course of Lectures on Medicine.
- (g) One Special Course of Lectures on Surgery.
- (h) Pathology and Bacteriology.

C. That he has attended Courses, and passed the class examinations in :—

- (k) Dental Histology and Patho-Histology.
- (l) Comparative Dental Anatomy.
- (m) Dental Surgery and Prosthetic Dentistry.

D. That he has received instruction in the Clinical Examination of living cases at the Dental Department of a General Hospital for a period of not less than six months.

5. The Final Examination will deal with the subjects in Classes *C.* and *D.*

6. On the expiration of twelve months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery.

7. For this Degree candidates will be required to submit a Thesis containing original work and investigations in some subject connected with Dentistry, which Thesis shall be submitted to examiners to be nominated by the Dental Advisory Board. The Degree will be awarded or withheld according to the report of these examiners.

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### REGULATIONS FOR THE DIPLOMA IN DENTAL SURGERY.

I.—In the Faculty of Medicine there is a Diploma in Dental Surgery, entitled Licentiate in Dental Surgery (L.D.S.), which is registrable in accordance with the Dentists Act, 1878 (41 to 42 Vict. xxxiii., Clause xviii.)

II.—The courses of study and the number and nature of the examinations qualifying for the Licentiate in Dental Surgery are prescribed by Regulations.

#### Regulations.

1. Candidates for the Diploma are required to pass such a preliminary examination as may from time to time be required by the General Medical Council for Registration as a Dental Student.

2. Candidates before admission to the Final Examination are required to furnish evidence (i) of having attained the age of twenty-one years, and (ii) of having

been engaged in professional study for a period of at least four years subsequent to the date of Registration as a Dental Student by the General Medical Council.

3. Candidates for the Diploma are required to present certificates of attendance upon the several courses of study prescribed by the University Regulations for attendance, and to satisfy the Examiners in four Examinations, viz. :—

- (a) The First Examination.
- (b) The Second Examination.
- (c) The Third Examination.
- (d) The Final Examination.

#### First Examination.

4. Candidates before presenting themselves for the First Examination are required to furnish (i) a certificate of Registration as a Dental Student by the General Medical Council, and (ii) Certificates of having satisfactorily attended courses in the prescribed subjects for the First Examination, viz. :—

- (a) Chemistry, Lectures and Laboratory work (6 months).
- (b) Physics, Lectures and Laboratory work (6 months).

NOTE.—Attendance upon these courses may be made at any Institution recognised for this purpose by the University.

The Examination consists of one written Paper in Chemistry and one in Physics, and a Practical Examination in both subjects.

Candidates must present themselves in *both* subjects. A candidate may be allowed to pass in *one* subject provided he has obtained a reasonable standard of marks in the subject in which he fails.

#### Second Examination.

5. Candidates before presenting themselves for the Second Examination must have passed the First Examination, and are required to furnish Certificates of having served for a period of not less than two

years pupilage in Mechanical Dentistry, either with a Registered Dentist, or in the Mechanical Laboratory of a Dental Hospital recognised for this purpose by the University, and of having attended in the University the following courses for the Second Examination :—

- (a) Dental Mechanics Lectures (3 months).
- (b) Dental Metallurgy Lectures and Practical (6 months).
- (c) Dental Materia Medica Lectures (3 months).

The Examination consists of a written paper in Dental Metallurgy and a practical and oral Examination in Mechanical Dentistry.

Candidates must present themselves in *both* subjects.

A Candidate may be allowed to pass in *one* subject provided he has obtained a reasonable standard of marks in the subject in which he fails.

NOTE.—At the Examination in Mechanical Dentistry, Candidates will be required to provide themselves with the following instruments, viz.:—

Wax Spatula, double-ended. Sculptors. Gouge and Handle. Vulcanite Files. Gold Files. Pliers, Pin-roughing and Bending, and Snipe-nose. Cutting Nippers. Broaches and Handles. Fret Saw. One Mellotte's Moldine Outfit. One Bunsen Burner (laboratory). Fine Saws. Chasers, Special. Blowpipe for Mouth, 12-inch. Solder Tweezers. Crown Holder. Shears, curved. Collar Pliers, N.P. Pin Nippers, plain. Rivetting Hammer. Dividers, 4½-inch.

The following instruments will be supplied by the Dental Hospital, viz.:—

Hammers for striking up plates. Horn Mallets. Ordinary casting materials and apparatus.

#### Third Examination.

6. Candidates before presenting themselves for the Third Examination must have passed the Second Examination, and are required to present certificates

of having attended in the University the following courses prescribed for the Third Examination, viz. :—

- (a) Anatomy, Lectures (6 months).
  - (b) Anatomy, Practical (12 months).
  - (c) Physiology, Lectures (6 months).
  - (d) Physiology, Practical Histology (3 months).
  - (e) Human and Comparative Dental Anatomy, Lectures (6 months).
  - (f) Dental Histology, Practical (3 months).
- The Examination consists of :—

A Paper and Oral Examination in Anatomy, a Paper and an Oral Examination in Physiology, a Paper in Dental Anatomy and Dental Histology, and an Oral Examination in Dental Anatomy and Dental Histology.

Candidates must present themselves in *all* subjects of the Examination.

A Candidate may pass in *two* subjects, *i.e.*, (a) Anatomy and Physiology, or (b) Dental Anatomy and Dental Histology, provided he has obtained a reasonable standard of marks in the subjects in which he fails.

#### Final Examination.

7. Candidates before presenting themselves for the Final Examination are required to have passed the Third Examination and to furnish certificates of having attended in the University, or in a Hospital recognised for the purpose by the University, courses of instruction in the subjects prescribed for the Final Examination, viz. :—

- (a) Medicine Lectures for Dental Students (6 months).
- (b) General Surgery Lectures for Dental Students (6 months)

- (c) Dental Surgery, Lectures (6 months).
- (d) Dental Pathology and Bacteriology, Lectures (3 months).
- (e) Dental Pathology and Bacteriology, Practical (3 months).
- (f) Clinical Dental Surgery (6 months).
- (g) Clinical Medicine and Surgery (at a recognised General Hospital for twelve months).
- (h) The practice of a Dental Hospital or the Dental Department of a General Hospital recognised by the University for a period of two years.

The Examination consists of :—

A Paper in General Surgery and Surgical Diseases of the Mouth, a Paper and Oral Examination in Dental Surgery and Dental Pathology, a Practical Examination at the Dental Hospital.

NOTE.—Candidates may be examined :—

- (a) On the treatment of Dental Caries, and may be required to prepare and treat teeth by filling with gold or other material, by inlaying or by crowning, or to do any other operation in Dental Surgery.

(Candidates must provide their own instruments.)

- (b) On the Mechanical and Surgical treatment of the various irregularities of children's teeth.

Candidates must present themselves in *all* the subjects of the Examination, and failure in any one part of the Examination entails failure in all.

#### REFERRED CANDIDATES.

Candidates referred at the L.D.S. Examinations are required, before being re-admitted for Examination, to

take out additional instruction, for a period of at least three months, subsequent to the date of reference, in the subject or subjects in which they failed to satisfy the Examiners.

The referred instruction shall be of a practical nature in the subjects where practical work forms part of the course.

In Mechanical Dentistry, the referred instruction must be for a period of *six months*, under the conditions specified by regulations.

All Candidates referred at the Final Examination are required to attend additional instruction in Practical Dental Surgery at a recognised Dental Hospital for a period of at least *six months*, in addition to any further referred instruction which the Board of Examiners may require.

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## FEES.

### DENTAL SCHOOL.

#### Membership Fees.

A Dental student can enter either as a Composition or Occasional student, *i.e.*, he can pay his fees in two instalments or as he takes out his classes. Composition students pay a MEMBERSHIP FEE of £3 3s., once for all; occasional students pay £1 1s. for each Winter Session, and 10s. 6d. for each Summer Session during which they may be in attendance upon lectures. The regulations in connection with the attendance of medical students (see p. 457) apply also to Dental Students, whose composition fee, however, covers normally three and not five years.

#### Class Fees.

##### (i.) FOR L.D.S. DIPLOMA.

		£	s.	d.
Anatomy Lectures, 1st Summer	...	...	6	6
Anatomy Lectures, 2nd Summer	...	...	6	6
Anatomy, Practical, 1st Summer	...	...	2	12
Anatomy, Practical, 2nd Winter	...	...	5	5
Anatomy, Practical, 2nd Summer	...	...	2	12
Physiology Lectures...	...	...	6	6
Physiology, Practical	...	...	4	4
Chemistry Lectures ...	...	...	4	4
Chemistry, Practical	...	...	3	3
Physics	...	...	5	5
General Medicine	...	...	6	6
General Surgery	...	...	6	6
Dental Anatomy	...	...	3	3
Dental Surgery	...	...	3	3
Dental Materia Medica	...	...	2	2
Dental Mechanics	...	...	2	2
Dental Metallurgy	...	...	2	2
Practical Dental Metallurgy	...	...	2	2
Dental Histology and Pathology, Practical	...	...	3	3
Dental Pathology, Lectures	...	...	1	1
Dental Bacteriology, Practical	...	...	1	1
		<hr/>		
		£78	15	0
		<hr/>		

(ii.) FOR B.D.S. DEGREE.		£	s.	d.
Anatomy Lectures, First Winter	...	6	6	0
Anatomy Lectures, Second Winter	...	6	6	0
Anatomy, Practical, First Winter	...	5	5	0
Anatomy, Practical Second Winter	...	5	5	0
Anatomy, Second Summer	...	3	3	0
Physiology Lectures	...	6	6	0
Physiology, Practical	...	4	4	0
Chemistry Lectures	...	4	4	0
Chemistry, Practical	...	3	3	0
Elementary Biology	...	5	5	0
Physics	...	5	5	0
Pathology Lectures	...	4	4	0
Pathology, Practical	...	4	4	0
Dental Pathology, Lectures	...	1	1	0
Dental Bacteriology, Practical	...	1	1	0
Medicine	...	6	6	0
Surgery	...	6	6	0
Dental Anatomy	...	3	3	0
Dental Surgery	...	3	3	0
Dental Mechanics	...	2	2	0
Dental Metallurgy	...	2	2	0
Practical Dental Metallurgy	...	2	2	0
Dental Materia Medica	...	2	2	0
Dental Histology and Pathology, Practical	...	3	3	0

£95 11 0

Microscopes.

For statement as to Microscopes, which applies only to students reading for Degrees and not to L.D.S. students, see page 460.

#### Composition Fees.

**The Composition Fee for the courses required for the L.D.S. of the University, or any of the Corporations alone is £60;**

That for the courses required for the L.D.S. and the degree in Dentistry of the University is £75; that for the L.D.S. in combination with the M.R.C.S. and L.R.C.P. is £85; and that for the M.B., Ch.B., and B.D.S., is £95.

Each of these fees covers the cost of the courses given at the University for the qualifications indicated, but does not include fees for Hospital teaching. Each of these Composition fees is payable in two instalments, one on entrance, the other at the commencement of the second year of study.

#### Incidental Fees.

These fees are intended to cover the cost of apparatus, material, &c., used in the various practical classes. They are governed by the same rules as those applying to medical students and are payable to the Secretary.

	£	s.	d.
Dissecting Room (each Winter)	..	..	1 11 6
Dissecting Room (each Summer)	..	..	0 10 6
Practical Physiology	..	..	2 2 0
Practical Pathology	..	..	1 11 6
Dental Histology	..	..	1 1 0

#### Examination and Admission Fees.

The fees payable before a student is admitted to any of the examinations are set down below. A student failing at any examination will be called upon to pay a half-fee when next presenting himself for the same examination.

	£	s.	d.
Matriculation	..	..	2 0 0
First Examination for B.D.S. or L.D.S.	..	2	0 0
Second Examination for B.D.S. or L.D.S.	..	2	0 0
Third Examination for L.D.S.	..	2	0 0
Final Examination for B.D.S. or L.D.S.	..	2	0 0
Examination for M.D.S.	..	2	0 0
Admission to Degree of B.D.S.	..	7	0 0
Admission to Degree of M.D.S.	..	8	0 0
Admission to Diploma of L.D.S.	..	10	0 0

*Admission fees must be paid at the same time as the fees for the Final Examination for the Degrees or Diploma.*

## Clinical Hospital Fees.

For General Surgical Hospital Practice, Lectures, and Demonstrations :

	£	s.	d.
SURGERY - Two Winters ...	...	...	10 10 0
SURGERY - One Winter ...	...	...	6 6 0

*Payable to Mr. George Heaton, Hon. Secretary to the Clinical Board.*

## Dental Hospital Fees.

The Fees for—

Two years' pupilage is ... ... ... 100 Guineas.

Two years' Hospital practice ... ... 20 "

Pupilage and practice combined—

Fee payable first year ... ... 60 "

Fee payable second year ... ... 45 "

One month's probation ... ... 5 "

Hospital practice payable in two instalments—

First year ... ... ... 13 "

Second year ... ... ... 8 "

Six months extra ... ... ... 7 "

Three months extra ... ... ... 4 "

*Dental Hospital Fees are payable in advance to the Dean of the Dental Hospital.*

## Total Fees for B.D.S.

For the convenience of those desiring to ascertain the total cost of obtaining the License in Dentistry, and the Degree of Bachelor of Dental Surgery in the University, the following table has been drawn up. It presumes that the student enters by the Composition method and makes no allowance for failures at examinations. No

## DENTAL FEES.

allowance is made for the cost of books or instruments for private tuition (if necessary), or for the fee for apprenticeship.

	£ s. d.	£ s. d.
MATRICULATION ... ... ...	2 0 0	2 0 0
FIRST WINTER—Membership Fee ...	3 3 0	
Half Composition ..	37 10 0	40 13 0
FIRST SUMMER— Dental Hospital ...	21 0 0	21 0 0
First B.D.S. Examination... ...	2 0 0	2 0 0
SECOND WINTER—Half Composition	37 10 0	
A General Hospital ..	10 10 0	48 0 0
B.D.S. Second Examination ...	2 0 0	
L.D.S. Second Examination ...	2 0 0	4 0 0
THIRD SUMMER—Third L.D.S. ...	2 0 0	2 0 0
FOURTH YEAR—A General Hospital	6 6 0	
Final L.D.S. Examination ...	2 0 0	6 6 0
Final B.D.S. Examination ...	2 0 0	4 0 0
Admission to Diploma of L.D.S. ...	10 0 0	
Admission to Degree of B.D.S. ...	7 0 0	17 0 0
		£146 19 0

## TIME TABLE FOR THE B.D.S. CURRICULUM.

YEAR 1907—1908.

## FIRST YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Chemistry, Lectures ...	... 9.30	9.30	9.30	9.30	...	...
" Practical ...	... 2.0	...	2.0	...	...	...
Physics, Lectures ...	... 11.30	...	11.30	...	11.30	...
" Practical ...	... ...	...	...	...	2.30	...
Anatomy, Lectures ...	... 10.30	...	10.30	...	...	...
" Practical ...	... ...	2 to 5	...	{ 10.30 to 12.30	9.0 to 11.30	...
Elementary Biology, Practical ...	... 10.30	...	...	...	...	...
" " Lectures ...	... 12.30	...	12.30	...	...	...
Dental Metallurgy, Lectures ...	}	At University Buildings (Bournbrook).			10.0	
" " Practical ...					11.0	
<b>SUMMER SESSION.</b>						
Chemistry, Lectures ...	... 9.30	...	9.30	...	9.30	...
" Practical ...	... 2.0	2.0	...	2.0	...	9.30
Physics, Lectures ...	... ...	9.30	...	9.30	...	...
" Practical ...	... ...	...	...	...	2.30	...
Elementary Biology, Practical ...	... 10.30	...	10.30	...	...	...
" " Lectures ...	... 12.30	...	12.30	...	...	...
Dental Materia Medica, Lectures ...	...	...	...	3.0	...	...
Dental Mechanics, Lectures ...	...	4.0	...	...	...	...

## SECOND YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Physiology, Lectures .	...	10.30	10.30	10.30	10.30	...
" Experimental } (Oct. to Dec.) }	...	...	...	2.30 or 2.30	2.30	...
" Chemical } (Jan. to Mar.) }	...	...	...	2.30 or 2.30	2.30	...
Anatomy, Lectures .	...	12.0	12.0	12.0	12.0	...
" Practical .	{ 9 to 12 2 to 5	2 to 3 4 to 5	9 to 10.30 2 to 5	9 to 10.30 2 to 5	9 to 10.30 2 to 4	9 to 12
" (Embryology) ...	...	3.0	...	...	...	...
Dental Anatomy, Lectures }	...	...	...	...	4.0	...
<b>SUMMER SESSION.</b>						
Anatomy, Lectures .	...	10.0	...	10.0	...	10.0
" Practical .	... 3 to 5	{ 9 to 11 2 to 3	9 to 10 2 to 5	9 to 11 2 to 3	9 to 10 2 to 5	9 to 12
Physiology, Practical } Histology }	11.0	11.0	11.0	11.0	11.0	...
" Lectures .	...	3.0	...	3.0	...	...
Dental Histology, Practical }	2.0	...	...	...	...	...

## THIRD YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Dental Hospital Practice	... 9.0	9.0	9.0	9.0	9.0	...
Clinical Medicine, Junior Tutorial Classes at General and Queen's Hospitals	... 12.0	...	12.0	...	...	...
Clinical Surgery, Junior Tutorial Classes at General and Queen's Hospitals	... 12.0	...	12.0	...	...	9.30 10 11.30
Pathology and Bacteriology (Oct. to Jan.), Lectures	2.0	2.0	2.0	2.0	2.0	...
" " Practical	3.0	...	...	3.0	...	...
Dental Pathology Practical (Feb. to Mar.)	... 2.0	...	...	...	2.0	...
Medicine Lectures (Oct. to Dec.)	... 4.0	...	4.0	...	...	...
" " (Jan. to Mar.)	... 4.0	...	4.0	...	4.0	...
General Surgery Lectures (Oct. to Dec.)	... 4.0	...	4.0	...	4.0	...
" " (Jan. to Mar.)	... 4.0	...	4.0	...	4.0	...
Dental Surgery Lectures	... 4.0	...	4.0	...	4.0	...
" Bacteriology, Practical			By arrangement			
<b>SUMMER SESSION.</b>						
Dental Hospital Practice	.. 9.0	9.0	9.0	9.0	9.0	9.0
Clinical Dental Surgery (at the Dental Hospital)			By arrangement.			
Practical Pathology	... 2.0	...	...	...	2.0	...

## FOURTH YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Dental Hospital Practice ...	9.0	9.0	...	9.0	9.0	...
Casualty Dressing at General ) and Queen's Hospitals ... )	...	...	9.0	...	...	9.0
Clinical Medicine, Senior Tu- torial Class at General and Queen's Hospitals ... )	...	...	12.0	...	...	...
Instruction in the Clinical Ex- amination of living cases ) at the Dental Department of the General Hospital ... )	Six months--by arrangement.					
<b>SUMMER SESSION.</b>						
Dental Hospital Practice ...	9.0	9.0	9.0	9.0	9.0	9.0

All Students are requested to take notice that they must attend **at least two-thirds** of the lectures and practical classes of each course, and that the Schedules of those who do not observe this regulation will not be signed. They must attend the class examinations in Chemistry, Physics, and Biology, and are advised to attend also all other class examinations.

## TIME TABLE FOR L.D.S. CURRICULUM.

YEAR 1907—1908.

## FIRST YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur	Fri.	Sat.
<b>WINTER SESSION.</b>						
Chemistry, Lectures ...	...	...	11.30	...	11.30	...
Chemistry, Practical ...	...	2.0	2.0	...	2.0	...
Physics, Lectures ...	...	...	9.30	...	9.30	...
Physics, Practical ...	...	...	...	...	...	$\left. \begin{array}{l} 10.0 \\ \text{and} \\ 2.30 \end{array} \right\}$
Dental Metallurgy, Lectures ...	...	...	At University Buildings, Bournbrook.	{ 10.0 11.0		
Dental Metallurgy, Practical ...	...	...				
<b>SUMMER SESSION.</b>						
Physiology (Practical Histology) 11.0	11.0	11.0	11.0	11.0	11.0	...
Dental Materia Medica,	{ ...	... ...	3.0	...	...	...
Lectures } ...						
Dental Mechanics, Lectures ...	...	4.0	...	...	...	...
Anatomy, Practical ...	{ 9 to 11 3 to 5	{ 9 to 11 3 to 4	{ 9 to 11 2 to 5	{ 9 to 11 4 to 5	{ 9 to 11 2 to 5	9 to 12
Anatomy, Lectures ...	2.0	2.0	...	2.0	...	...
Practical Dental Mechanics ( <i>at the Dental Hospital</i> ) ...	...	...	By arrangement,			...

## SECOND YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Dental Hospital Practice 3 days a week)	9.0	9.0	9.0	9.0	9.0	...
Clinical Medicine, Junior Tu- torial Class at General and Queen's Hospitals ...)	...	12.0	...	12.0	...	...
Clinical Surgery, Junior Tu- torial Classes at General and Queen's Hospitals ...)	...	...	...	...	...	9.30 to 11.30
Anatomy, Practical (2 days a week 9 to 12)	3 to 5	2 to 5	2 to 5	3 to 5	2 to 4	...
Anatomy, Tutorial ...	2.0	...	...	2.0	...	...
Physiology, Lectures ...	12.0	...	12.0	...	12.0	...
Human and Comparative Dental Anatomy, Lectures )	...	...	...	...	4.0	...
<b>SUMMER SESSION.</b>						
Dental Hospital Practice ...	9.0	9.0	9.0	9.0	9.0	9.0
Dental Histology, Practical ..	2.0	...	...	...	...	...
Anatomy, Practical ... ..	..	2 to 5	2 to 5	..	2 to 5	...
Anatomy, Lectures ... ..	12.0	12.0	...	12.0	...	...
Anatomy, Tutorial ... ..	3.0	...	...	3.0	...	...
Clinical Dental Surgery ( <i>at the</i> <i>Dental Hospital</i> ) ...)	...	By arrangement.			...	...

## THIRD YEAR.

SUBJECTS.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
<b>WINTER SESSION.</b>						
Casualty Dressing at General and Queen's Hospitals ...	...	...	9.0	...	...	9.0
Dental Hospital Practice (4 days a week)	9.0	9.0	9.0	9.0	9.0	9.0
Clinical Medicine, Senior Tutorial Class at General and Queen's Hospitals ...	...	...	12.0	...	...	...
Medicine Lectures for Dental Students (Oct. to Dec.) ...	...	...	4.0	...	...	...
Medicine Lectures for Dental Students (Jan. to Mar.) ...	...	4.0	...	...	4.0	...
General Surgery Lectures for Dental Students (Oct. to Dec.) ...	...	4.0	...	...	4.0	...
General Surgery Lectures for Dental Students (Jan. to Mar.) ...	...	...	4.0	...	...	...
Dental Surgery, Lectures ...	...	...	...	4.0	...	...
Pathology and Bacteriology Lectures (Oct. to Jan.) ...	2.0	2.0	2.0	2.0	2.0	...
Dental Bacteriology, Practical (Jan.) ...	3.0	...	...	3.0	...	...
Dental Pathology, Practical (Feb. to Mar.) ...	...	2.0	...	...	2.0	...
<b>SUMMER SESSION.</b>						
Dental Hospital Practice ...	9.0	9.0	9.0	9.0	9.0	9.0
Clinical Dental Surgery ( <i>at the Dental Hospital</i> ) ...				By arrangement,		

All Students are requested to take notice that they must attend **at least two-thirds** of the lectures and practical classes of each course, and that the Schedules of those who do not observe this regulation will not be signed. They must attend the class examinations in Chemistry and Physics, and are advised to attend also all other class examinations.

## DEPARTMENT OF DENTISTRY.

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### Syllabus of Lecture Courses.

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#### I. SPECIAL SUBJECTS.

##### **DENTAL SURGERY AND PATHOLOGY.**

*Lecturer:* F. E. HUXLEY, M.D.S., M.R.C.S., L.D.S.  
Edin.

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Irregularities of the teeth and jaws; general principles of their correction.

Dental Caries, its causes and treatment.

Abrasion, erosion and fracture of teeth.

The dental pulp, its diseased conditions and their treatment.

Diseases of the gums and periosteum.

Alveolar abscess. Dental Cyst.

Diseases of the antrum.

Extraction of teeth. Hæmorrhage.

Odontomes, and tumours of parts adjacent to the teeth.

Neuralgias and other reflex disorders.

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##### **DENTAL MATERIA MEDICA.**

*Lecturer:* W. THOMPSON MADIN, L.D.S., Eng.

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The drugs and remedies used in dentistry generally.

New drugs as they appear.

Prescribing.

Composition of filling materials.

Anaesthetics : General and local.

## DENTAL ANATOMY AND PHYSIOLOGY.

HUMAN AND COMPARATIVE.

*Lecturer:* JOHN HUMPHREYS, M.D.S., L.D.S.I., F.L.S.

The method and use of the study of odontology.

The general and minute structure and composition of the teeth, and their modifications in fishes, reptiles, and mammals.

The arrangement and uses of the teeth of man and typical animals.

Structure of the gum, periosteum, and dental pulp.

Development of the teeth.

Development of the jaws, alveoli, &c., and their anatomical relations.

Mastication and the oral secretions.

This course is fully illustrated by the large collection of skulls, teeth, &c., contained in the Museum, as also by microscopic preparations and drawings, and a series of lantern slides.

## DENTAL HISTOLOGY AND DENTAL PATHOLOGY.

*Lecturer:* A. W. WELLINGS, B.D.S., L.D.S.

I.—DENTAL HISTOLOGY. (Lectures and Practical.)

The course will be held in the Physiological Laboratory on each Monday throughout the Summer Session, from 2 to 4 p.m.

The methods employed in the preparation of hard and soft tissues for microscopical examination.

The structure and composition of enamel, dentine and cementum in man.

The comparative minute anatomy of the teeth.

The pulp and other soft tissues of the teeth and mouth.

The development of the teeth in man and in some of the lower animals.

**II.—DENTAL PATHOLOGY. (Practical.)**

This course will be held in the Pathological Laboratory from February to March, during the Winter Session, on Tuesdays and Fridays, at 2 p.m.

Enamel, dentine, cementum,—developmental defects and caries.

The dental pulp,—inflammation; degenerations.

Periodontal membrane,—Inflammatory conditions and tumours.

Pathological modifications of the muco-periosteum.

Oral tumours.

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**DENTAL MECHANICS.**

*Lecturer:* A. E. DONAGAN, L.D.S., Edin., M.A., Cantab.

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Introduction and general principles of Prosthetic Dentistry.

Treatment of the mouth preparatory to the insertion of artificial dentures.

Materials used and methods employed in taking impressions of the mouth.

Casting in plaster and metal.

Methods of obtaining the correct articulation of the teeth.

Vulcanite work.

- (a) The preparation of dental rubber.
- (b) Artistic arrangement of teeth.
- (c) Production of plates of equal thickness.
- (d) Flasking, packing, and vulcanizing.
- (e) Clasps and strengtheners.
- (f) Methods of weighting lower dentures.

Plate and tube work.

Combination work.

Continuous gum work and section blocks.

Making and mounting springs and swivels.

Mechanical treatment of Dental Irregularities and Oral Deformities.

Varieties of crown and bridge work.

Mechanical treatment of Fractured Maxillæ.

The course will be fully illustrated by the exhibition of models, appliances, and diagrams.

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### DENTAL METALLURGY.

*Professor:* THOMAS TURNER, M.Sc., A.R.S.M., F.I.C.

*Lecturer:* O. F. HUDSON, B.Sc., A.R.C.S.

*Assistant Lecturer:* D. M. LEVY, A.R.S.M.

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A Course of both theoretical and practical instruction is given in the above subject.

During the Winter Session, twenty lectures are delivered on Saturdays, at 10 a.m. These deal with the physical, mechanical, and chemical properties of metals; oxidation and reduction; fuel, furnaces and furnace materials; melting, casting and working in metals; the properties of gold, silver, copper, tin, lead, zinc, mercury and other metals and of alloys and amalgams, so far as they are applied in dentistry.

A Practical Class is held in the Metallurgical Laboratory on Saturdays, from 11 till 1, during the Winter Session, to enable students to perform experiments and operations illustrative of some of the more important subjects dealt with in the lectures.

*The instruction is given at the University New Buildings, Bournbrook.*

**MEDICINE FOR DENTAL STUDENTS.***Lecturer:* T. STACEY WILSON, M.D., M.R.C.P.

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Introduction : Aims of medicine, etc.

General diseases.

Diseases of the alimentary system.

Hæmopoietic system.

Diseases of the circulatory system.

Diseases of the respiratory system.

Diseases of the urinary system.

Diseases of the nervous system.

Summary of special bearings of medicine upon the work of the Dental Surgeon.

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**GENERAL SURGERY FOR DENTAL STUDENTS.***Lecturer:* FRANK MARSH, M.B., Ch.M.; F.R.C.S.

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Inflammation.

Specific diseases.

Injuries.

Fractures.

Injuries to nerves.

Injuries to joints.

Injuries to face and neck.

Tumours.

Cysts.

Hare-lip and cleft palate.

Affections of maxillary and frontal sinuses.

Affections of salivary glands.

Affections of cervical lymphatic glands.

Enlarged tonsils and adenoids.

Closure of jaws.

Bronchocele.

## II. GENERAL SUBJECTS.

Anatomy, Practical Anatomy, Physiology, Practical Physiology, Chemistry, Practical Chemistry, Physics, Elementary Biology, Pathology and Bacteriology. (See Faculty of Medicine.)

### Text Books.

The following text books must be purchased by Dental Students :—

Dental Anatomy (Tomes).

Diseases and Injuries of the Teeth (Smale and Colyer).

Theory and Practice of Surgery (Walsham).

Dental Microscopy (Hopewell-Smith).

Injuries and Surgical Diseases of the Face, Mouth and Jaws (Marshall).

Mechanical Dentistry (Richardson).

Dental Metallurgy (Smith).

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BIRMINGHAM DENTAL HOSPITAL,  
132, GREAT CHARLES STREET.

*Dean—FRED. W. RICHARDS, L.D.S.*

*Hon. Dental Surgeons—*

- H. BREWARD NEALE, L.D.S.
- F. E. HUXLEY, M.R.C.S., M.D.S., L.D.S.
- F. W. RICHARDS, L.D.S.
- F. H. GOFFE, L.D.S.
- A. E. DONAGAN, M.A., L.D.S.
- J. MOUNTFORD, L.D.S.

*Hon. Assistant Dental Surgeons—*

- W. T. MADIN, L.D.S.
- J. E. PARROTT, L.D.S.
- W. M. KNOTT, L.D.S.
- G. F. CALE-MATTHEWS, L.D.S.
- A. H. PARROTT, B.D.S., L.D.S.
- C. H. HOWKINS, M.R.C.S., L.R.C.P., L.D.S.
- S. H. ROWE, L.D.S.
- A. W. WELLINGS, B.D.S., L.D.S.
- J. H. HARRIS, L.D.S.
- E. V. TOMEY, L.D.S.
- R. H. ASTBURY, M.B., Ch.B., B.D.S., L.D.S.
- W. BOWATER, B.D.S., L.D.S., M.R.C.S., L.R.C.P.

*Hon. Anæsthetists—*

- S. W. HAYNES, M.D., C.M.
- W. J. McCARDIE, B.A., M.B., B.C.
- G. S. MOORE, M.R.C.S., L.R.C.P.
- A. H. WILSON, L.R.C.P., L.R.C.S.
- R. H. ROLLINSON WHITAKER, F.R.C.S.
- J. ST. JOHNSTON, L.R.C.P., L.R.C.S.
- J. K. SYMS, M.R.C.S., L.R.C.P.

*Demonstrators—*

- E. V. TOMEY, L.D.S.
- J. H. HARRIS, L.D.S.

*House Surgeon—*

- W. C. RETALLACK, L.D.S.

The New Dental Hospital is situated in Great Charles Street, within a few minutes walk of the University. It has ample accommodation for the teaching of the practical side of the curriculum for Dentistry.

On the ground floor are a large waiting hall, private rooms for the Hon. Staff and Nurses, Museum and Class rooms, students' cloak-room, lavatories and common room.

On the first floor are a large lecture hall, patients' waiting room, examination and extracting rooms, and the anaesthetic department, consisting of operating room, separate waiting and recovery rooms for male and female patients.

On the second floor are the filling and prosthetic departments, equipped with all the latest requirements for teaching and training dental students in mechanical, prosthetic, and operative work.

The operating chairs are of the latest hydraulic-pump pattern, the front row being fitted with Clarke's spittoons and saliva ejectors. The electric current is supplied for lighting and motive power for dental engines and lathes; hot and cold water is laid on in all the departments. The heating of the building is on the low-pressure radiator system.

The Hospital clinic is large and varied, and affords ample opportunity to students to become dexterous in the treatment of teeth and familiar with the varied methods of overcoming the difficulties of their profession.

There is an annual attendance of about 12,000 patients, and the operations average 26,000, including gold and other fillings, and many cases of porcelain inlays, gold and porcelain crowns, bridges, and regulation cases.

The filling rooms have space for forty-five operating chairs.

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RULES AND REGULATIONS FOR STUDENTS.

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**Admission.**—Students are admitted to this Hospital on the understanding that it is their intention to obtain the Dental Diploma of the University or one of the Royal Colleges of Surgeons of the United Kingdom *cum curriculo*, and shall produce a certificate of registration as a Dental Student by the General Medical Council. They shall also sign their names as willing to conform to these rules and regulations.

The Dean receives intending students on the first Tuesday in April and October for the purpose of registration; they are required to bring their fees and certificates of registration as Dental Students.

**Attendance.**—The Hospital is open daily at nine o'clock (Sundays excepted), and students must attend at that hour unless their attendance is required at one of the General Hospitals or the University.

The Hospital must be attended for two years consecutively, irrespective of University vacations.

Leave of absence, when desired, must be obtained (in writing) from the Dean, and a medical certificate supplied in case of illness extending over a week.

An attendance sheet is provided, and students must see that their names are duly entered thereon.

**Instruments.**—Every student will be required to obtain Instruments for the Hospital practice before his attendance will be recognised. A list of these will be furnished to each student on entry.

**Dresserships.**—Regular days will be appointed by the House Surgeon for each student to attend in the Extracting, Anæsthetic, and Conservation Rooms. Cases for filling, and operating chairs will be allotted to students by the Dental Officers in attendance. Students shall enter all appointments made with patients on the papers provided for this purpose, with the particulars of the operation. Every operation must be carefully registered in the Hospital Books.

**Requirements of Curriculum.**—During the two years' attendance students will be required :—

- (a) To attend as dressers in the Extracting and Anæsthetic Rooms.
- (b) To perform filling and other conservative operations.
- (c) To treat at least four regulation cases mechanically.
- (d) To make and insert at least six dentures; also a minimum of eight crowns, a specified number being of Richmond and collared type.
- (e) To attend the special courses of Clinical Lectures and Demonstrations.

**Schedules.**—Students are required to apply to the Dean for their Schedules to be signed three months previous to the date of the examination by the Licensing Body, and no schedule will be passed unless the student has given satisfaction in his work and attendances, and acquitted himself satisfactorily at the examinations.

**Conduct.**—Students must consider themselves strictly under the control of the Officers of the Hospital. All unnecessary conversation must be avoided, and quietness and gentlemanly conduct towards the patients observed.

**Demonstrations.**—A special course of Demonstrations is held for first year students, and no student will be allowed to undertake any operation until he has attended to the satisfaction of the Demonstrators and passed an examination in the subjects studied at the Demonstration.

The student after having completed the course of demonstrations, and after passing the examination held by the Demonstrators, is appointed a dresser in the Extraction and Conservation Rooms, where he will receive instruction in Operative Work.

**Operative Work.**—Each student will be required to do examples of the various types of filling in a satisfactory manner.

Plastic filling, amalgam, osteo and gutta-percha.

Gold filling (Cohesive, non-cohesive and tin).

Inlay work.

Crown and bridge.

**Regulation Work.**—Each student will keep a record of cases of Regulations undertaken by him.

Each student is required to treat the following types of regulation cases : —

Pushing one or more upper incisor or canine teeth over the bite, or rotating same.

Retract, etc., upper bicuspids and canines after extraction of sixth year molars.

Expansion of arch.

Protrusion of upper incisors.

The mechanical appliances must be made at the Hospital.

**Anæsthetics.**—Each student shall receive instruction for at least one day per week from four to six months in extracting under anæsthetics under the Dental Officers in charge of the Anæsthetic rooms.

Each student shall receive instruction in the administration of Nitrous Oxide for at least twelve mornings (three months) from one of the Hon. Anæsthetists.

Mechanical and Prosthetic Work.—This department is open Monday to Friday from 9 a.m. to 6 p.m., Saturday 9 a.m. to 1 p.m. for making, under the supervision of a skilled teacher, dentures and regulating appliances.

Students will be appointed to attend in rotation by the Senior Honorary Officer of the Department.

A course of Mechanical and Prosthetic Demonstrations are given previous to the examination for the L.D.S.; all students are required to attend.

Pupils are taken for the necessary two years instruction in mechanical work. Application for particulars to be made to the Dean.

**Examinations.**—Annual Compulsory Examinations are held to test the progress of students; they are arranged as follows :

#### *First Year.*

- 1.—Preliminary work, extractions and simple fillings at end of Demonstrators' course.
- 2.—Series of specimens of mechanical work, and mechanical examination.
- 3.—Operative work at the end of the first year.

#### *Second Year.*

- 1.—Advanced work in root treatment, fillings, crowns and inlays.
- 2.—Regulation cases, models, and appliances, illustrating the students' work.
- 3.—“Charles Greene” Memorial Medal for Anæsthetic Examination.
- 4.—Ash's Prize for a special essay.

{A Prize with a Certificate will be awarded in each of the above sections if sufficient merit is shown, and the manner in which students perform the duties of their dresserships, and the regularity of their attendances will be taken into consideration in awarding the same.

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**UNIVERSITY OF BIRMINGHAM MEDICAL SOCIETY**  
 WITH WHICH IS INCORPORATED THE  
**QUEEN'S COLLEGE MEDICAL SOCIETY.**

*President:* Dr. G. H. MELSON.

*Hon. Treasurers:* Dr. STANLEY BARNES and Mr. H C. H. BRACEY.

*Hon. Secretaries:* Mr. FRANK BARNES and Mr. J. K. GAUNT.

This Society was founded at the Queen's College in 1877, J. H. Palmer, Esq., being the first President. It is thus the oldest Society in the University, and has had a career of considerable usefulness. Meetings are held every alternate Wednesday, at 8 p.m., in the Common Room (coffee and biscuits being provided), when patients, morbid specimens, instruments, &c., are exhibited, and papers read. Members are invited to show interesting cases and specimens at the commencement of the meetings. Sometimes "Clinical evenings" are held. The annual meeting takes place in October, when the retiring President gives an address. The object of the Society is to aid students in their medical studies.

The annual subscription is 2s. 6d., payable to either of the Treasurers.

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**DENTAL STUDENTS' SOCIETY.**

*President:* H. S. STEYNOR, L.D.S.

*President-Elect:* A. H. PARROTT, B.D.S.

*Vice-President:* CYRIL HOWKINS, M.R.C.S., L.D.S.

*Hon. Secretaries:* TREVOR MATTHEWS and L. G. JORDAN.

This Society was founded in 1886, and holds its meetings in the New Dental Hospital, Great Charles Street, once a fortnight during the Winter Term. The membership roll numbers nearly 100, and comprises past and present members of the Birmingham Dental School, and the officers of the Dental Hospital ex-officio.

The Society is, however, essentially a Students' Society, its object being primarily "the furtherance of

Dental Science" by means of the reading of papers, casual communications and the exhibition of living cases by students at the meetings. But combined with this object is another—that of promoting, to some extent at least, social life amongst its members in the University, and of serving as a connecting link between the now busy practitioner and his "alma mater." With this motive there are held annually a dinner, a smoking concert, and a pic-nic in the summer, while two evenings are usually given up to debates or lantern exhibitions, and last year a conversazione was held with great success. Every Dental Student should become a member of the Society, as he thereby meets members of the Dental profession in Birmingham on the most pleasant footing, and he also derives much pleasure and valuable knowledge not to be gained from text books.

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### QUEEN'S MEDICAL MAGAZINE.

*Hon. Secretary:* H. F. HUMPHREYS.

*Chairman of Editorial Board:* L. BALL.

*Hon. Treasurer:* J. DALE.

This Magazine, founded in May, 1895, is published twice a term, *i.e.*, six times a year. The contents consist of short articles dealing with subjects, medical or otherwise, likely to be of interest to the students generally—reports on interesting hospital cases, and proceedings of various Medical Societies, athletic news, and general gossip of the Medical School. The object of the Magazine is to form a connecting link between the various sections of the Birmingham Medical School, and between past and present students; the subject matter is arranged as far as possible in accordance with this idea.

Communications to the Editor should be dropped into the box placed in the corridor for that purpose, and must be accompanied by the name of the contributor; but, if desired, this will only be made known to two members of the Board and will not be published.

# DAY TRAINING COLLEGE.

*FOR THE TRAINING OF TEACHERS IN PUBLIC ELEMENTARY SCHOOLS.*

Master of Method (Men):

FRANK ROSCOE.

Assistants: { C. W. MILLIGAN, B.A.  
A. W. BUTLER, M.A.

Teacher of Music: ARNOLD GRIFFIN.

Head Mistress (Women):

ANNE HOLLINGWORTH JOYCE, B.A.

Assistant Mistresses:

FLORENCE C. M. CLARK, B.A. (Lond.).

ADA BLANCHE TAYLOR.

ANNIE E. WARMINGTON, B.A. (Lond.).

EDITH U. SOWERBUTTS, B.Sc. (Vict.).

MILDRED F. FIELD.

EDITH M. HENLEY.

# DAY TRAINING COLLEGE.

In connection with the University there is a Training College, with departments for men and women, constituted under the regulations of the Board of Education, with the object of preparing students to become certificated teachers in Public Elementary Schools.

The ordinary Course covers two years, permission to reside for a third year being granted by the Board of Education in certain cases of special fitness.

Before admission Candidates must satisfy the following requirements:—

- (a) Obtain a first or second class in the Queen's Scholarship Examination or pass one of the examinations accepted by the Board of Education as equivalent thereto.

- (b) Satisfy the Medical Officer of the College as to their general health and physical fitness to undertake the work of teaching.
- (c) Have attained the age of 18 years on the 1st September immediately preceding admission.
- (d) Sign a declaration that it is their bona-fide intention to take up the work of teaching in public elementary schools.

After admission, students pursue in general subjects the curriculum of the University, this Course being recognised by the Board of Education as equivalent to Part II. of the Certificate Syllabus. In addition, they receive professional training in the form of :—

- (a) Lectures on the theory and practice of teaching.
- (b) Practice under supervision in certain of the Board Schools of the City.
- (c) Criticism and demonstration lessons.

This Course, with lessons in Reading, Music, etc., is intended to prepare for the Examination held annually by the Board of Education in the subjects of Part I. of the Certificate Syllabus.

During residence an annual grant of £25 in the case of men, and £20 in the case of women is received from the Board of Education. From this sum are deducted the University fees, amounting annually to £12 10s. (men) and £10 (women). The remainder serves as a contribution towards the cost of board and lodging, books, etc.

Students must reside with their parents or guardians, or in lodgings approved by the Master of Method or the Head Mistress, who exercise general supervision over their conduct and studies.

For forms of application and other particulars application should be made to

MR. F. ROSCOE (Men),

MISS JOYCE (Women),

The University of Birmingham.

## REGULATIONS FOR OFFICIAL DEGREES OPEN TO MEMBERS OF THE TEACHING STAFF OF THE UNIVERSITY.

Any Lecturer, Assistant Lecturer or Demonstrator may, on the recommendation of his Professor, apply for an Official Degree in the Faculty to which he belongs, provided that at the date of the Degree Congregation at which the degree would be conferred he shall have completed two complete academic years of service in the position he holds. Such candidates for Official Degrees are required to submit copies of their contributions to Science, Literature, or Medicine, or a Thesis specially prepared for the occasion. These papers will be submitted to Assessors, one of whom shall be an external examiner, and in the event of a Thesis having been submitted, the Assessors will be at liberty to question the candidate upon it, should they think fit, or to call upon him to pass any examination they may think proper. On the report of the Assessors the Faculty will decide in each case whether they will recommend the Senate to nominate the candidate for a degree.

Candidates who have no degree may be admitted in the first instance to the Degree of Bachelor only.

Candidates who already possess a degree may be admitted to such degree as the Faculty may decide, upon the report of the Assessors appointed to examine the credentials which they submit.

There will be no fees required for these official degrees.

*Forms of application may be obtained from the Registrar, and should be returned to him with two copies of the Thesis on or before May 8th.*

## GRADUATES.

## FACULTY OF SCIENCE.

## D.Sc.

			Date of Degree.
Allan, George Edwin	...	...	1903
Barnes, Arthur Stanley	...	...	1906
Buller, Arthur Henry Reginald		...	1903
Gibson, Walcot	...	...	1907
Imms, Augustus Daniel	...	...	1907
Lapworth, Herbert	...	...	1906
Miller, James	...	...	1904
Phillips, Percy	...	...	1907
Price, Thomas Slater	...	...	1903
Sand, Henry Julius Salomon	...	...	1905
Slator, Arthur	...	...	1906
Watts, Francis	...	...	1904
Wood, Ethel Mary Reader	...	...	1905
Wright, William	...	...	1904

## M.Sc.

Alexander, Connel William Long	...	1905
Andrew, Arthur Robert	...	1906
Barling, Gilbert	...	1901
Barrow, Fred	...	1904
Bayliss, Jessie Sproat	...	1906
Bridge, Thomas William	...	1901
Brown, Adrian John	...	1901
Burstall, Frederick William	...	1901
Carlier, Edmond William Wace	...	1901
Carter, Alfred Henry	...	1901
Chamberlain, Charlotte	...	1903
Collinge, Walter Edward	...	1903
Cox, Arthur Hubert	...	1905
Denning, Arthur du Pré	...	1903
Dixon, Stephen Mitchell	...	1906
Done, Edward	...	1904
Farmer, Robert Crosbie	...	1903
Foxwell, Arthur	...	1901
Frankland, Percy Faraday	...	1901

Friend, John Albert Newton	...	1903
Gebhard, Norman Leslie	...	1903
Heath, Robert Samuel	...	1901
Hickmans, Evelyn Marion	...	1906
Hill, Bostock	...	1901
Hillhouse, William	...	1901
Horton, Frank	...	1901
Hummel, Frank Harvey	...	1906
Kapp, Gisbert	...	1906
Imms, Augustus Daniel	...	1906
Lapworth, Charles	...	1901
Leith, Robert Francis Calder	...	1901
Lloyd, John Alexander	...	1901
Lloyd, Jordan	...	1902
Lodge, Oliver	...	1901
Malins, Edward	...	1901
Mason-Jones, Archibald John	...	1907
May, Bennett	...	1901
Merritt, Onera Amelia	...	1903
Morgan, Caroline Edith	...	1903
Morrison, James Thomas Jackman	...	1901
Parry, Ethel	...	1907
Phillips, Percy	...	1903
Poynting, John Henry	...	1901
Redmayne, Richard Augustine Studdert	...	1902
Roberton, Edward Heton	...	1904
Sand, Henry Julius Salomon	...	1901
Saundby, Robert	...	1901
Silvester, Clara Emily	...	1907
Slator, Arthur	...	1901
Smith, Charles Gordon	...	1907
Smith, Priestley	...	1901
Stanford, Robert Viner	...	1907
Stanton, Herbert Julian	...	1907
Stoward, Frederick	...	1907
Taylor, John William	...	1901
Taylor, Joseph Andrew	...	1905
Thompson, Herbert Bryan	...	1904
Turner, Thomas	...	1902
Turner, William Ernest Stephen	...	1904

Twigg, Elinor Adeline Nicolina	...	1903
Twiss, Douglas Frank	...	1903
Warth, Frederick John	...	1903
Watts, William Whitehead	...	1902
Whitcombe, Edmund Bancks	...	1901
White, Charles Arthur	...	1906
Willeox, Frank Ernest	...	1903
Windle, Bertram Coghill Alan	...	1901
Wood, Ethel Mary Reader	...	1902
Wright, William	...	1903
Wynn, William Henry	...	1901

## M.Sc. IN ENGINEERING.

Barlow, Thomas Morgan	...	1907
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## M.Sc. IN METALLURGY.

Scott, Gilbert Shaw	...	1907
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## B.Sc.

Anderson, Edward Bertram	...	1907
Ashford, Florence	...	1902
Atchison, Arthur Francis Turnour	...	1903
Ault, Wilfred Beaumont	...	1904
Bach, Mary Gertrude	...	1903
Badger, Alfred Bernard	...	1904
Baker, Thomas James	...	1906
Barnes, James Hector	...	1904
Barrow, Fred	...	1903
Beach, Mary	...	1907
Blackburn, Alfred Brown Ernest	...	1905
Blackwell, Norman George	...	1906
Borlase, Edward Thomas	...	1907
Boulton, William Savage	...	1902
Boyer, George Edward	...	1902
Briggs, Henry	...	1907
Bristow, Ernest	...	1905
Chattaway, Frederick Daniel	...	1902
Clough, George William	...	1901
Collinge, Walter Edward	...	1902
Coltart, William Laurie	...	1903
Cox, Arthur Hubert	...	1904
Cuthbertson, Hilda	...	1907

Davis, Herbert Valentine	...	...	1907
Deeley, Criss Parsonage	...	...	1906
Denning, Arthur Du Pré	...	...	1901
Done, Edward	...	...	1903
Dyche-Teague, Frances Clifford	...	...	1907
Ehrhardt, Ernest Francis	...	...	1902
Ensor, Ainslie Jackson	...	...	1906
Findley, Albert Ernest	...	...	1907
Friend, John Albert Newton	...	...	1902
Galloway, Mabel	...	...	1907
Gebhard, Norman Leslie	...	...	1901
Gedye, Nicholas George	...	...	1901
George, Lilian Emilie	...	...	1904
Gibson, Waleot	...	...	1901
Groom, Percy	...	...	1902
Grove, Alfred John	...	...	1907
Haines, Harry	...	...	1906
Hale, Harry William	...	...	1907
Heathcote, Henry Leonard	...	...	1906
Henry, Albert Ernest	...	...	1906
Hickmans, Evelyn Marion	...	...	1905
<i>Housman, Robert Holden (the late)</i>	...	...	1901
Hudson, Oswald Freeman	...	...	1906
Hulse, Richard Percival	...	...	1903
Humphreys, Percy James	...	...	1907
Jenkins, Frederick Reynolds	...	...	1907
Jones, Wilfred	...	...	1906
Keene, Horace Borton	...	...	1907
Knapp, Arthur William	...	...	1901
Landon, Hilda Mary	...	...	1905
Lapworth, Arthur	...	...	1902
Lapworth, Herbert	...	...	1901
Lawton, Hubert Ralph	...	...	1906
Lister, George Anslow	...	...	1906
Lotka, Alfred James	...	...	1901
Lovatt, Arthur	...	...	1906
Lowe, Harold Newton	...	...	1907
Maddock, Arthur Percy	...	...	1903
Magson, Egbert Hockey	...	...	1901
Manton, Arthur Woodroffe	...	...	1901

Mason-Jones, Archibald John ...	...	1906
Merritt, Onéra Amelia ...	...	1902
Millar, James Hill ...	...	1906
Morgan, Caroline Edith ...	...	1901
Morris, George Harris ...	...	1901
Newton, Ethel ...	...	1907
Newton, Herbert George ...	...	1906
Nicholls, Edgar Allen ...	...	1906
Owen, Gertrude Emily ...	...	1906
Parry, Ethel ...	...	1906
Partridge, Gertrude Mary ...	...	1906
Phillips, Percy ...	...	1901
Phillips, Walter Charles Stanley ...	...	1902
Pickard, Robert Howson ...	...	1901
Pooler, Frederick John ...	...	1902
Pope, Thomas Henry ...	...	1904
Priest, Samuel Benjamin ...	...	1902
Silvester, Clara Emily ...	...	1906
Silvester, Harry ...	...	1902
Smith, Cades Alfred ...	...	1903
Smith, Charles Gordon ...	...	1906
Stacey, William Henry ...	...	1904
Stanton, Herbert Julian ...	...	1905
Stuart, Murray ...	...	1907
Taylor, Joseph Andrew ...	...	1902
Thompson, Charles Joseph ...	...	1904
Thompson, Herbert Bryan ...	...	1903
Thorneycroft, Frederick James ...	...	1903
Todd, George William ...	...	1907
Turner, Thomas ...	...	1901
Twiss, Douglas Frank ...	...	1902
Udal, John Pountney ...	...	1904
Walker, Arthur Oldfield ...	...	1906
Warth, Frederick John ...	...	1901
Watts, Francis ...	...	1902
Whitehouse, Richard Henry ...	...	1907
Wilding, Jane Ellis ...	...	1902
Wilcox, Frank Ernest ...	...	1901
Wright, Eva ...	...	1906

Wright, Harry	...	...	...	...	1906
Wright, Robert	...	...	...	...	1906

## B.Sc. IN ENGINEERING.

Barlow, Thomas Morgan (Electrical)	...	1906
Bishop, Douglas Howard	...	1906
Fisher, William Ernest (Mechanical)	...	1906
Green, George Wilfred Acland (Mechanical)	...	1907
Greenway, Noel Wilson (Mechanical)	...	1907
Harris, Arnold William Elsmere (Electrical)	...	1905
Heathcote, Ernest William (Electrical)	...	1905
Hummel, Frank Harvey (Civil)	...	1905
Kershaw, Lawrence William (Civil)	...	1907
Kinder, Frederick Thomas	...	1906
Knight, Arthur Noel Stanley (Mechanical)	...	1907
Moncur, James (Civil)	...	1905
Pipe, Thomas Sylvanus (Electrical)	...	1905
Poynting, Arthur (Civil)	...	1905
Ritchie, George Thwaits (Civil)	...	1907
Roberts, Samuel Arthur (Mechanical)	...	1904
Smart, John Deiro (Mechanical)	...	1907
Smith, Sydney (Mechanical)	...	1907
Tunbridge, Edward William (Mechanical)	...	1905
Watson, Ernest Ansley (Electrical)	...	1907
Wilkes, Samuel John Herbert (Mechanical)	...	1906

## B.Sc. IN METALLURGY.

Scott, Gilbert Shaw	...	...	...	1906
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## B.Sc. IN MINING.

De, Satis Chandra	...	...	...	1907
Hafiz, Abdul	...	...	...	1907
Read, Harry Crible	...	...	...	1907
Seyfried, John Thaddeus de	...	...	...	1907
Smith, Gavin Hildick	...	...	...	1907
Whitehouse, James	...	...	...	1906

## FACULTY OF ARTS.

## D. LITT.

Fiedler, Elise Minna	...	...	...	1903
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## D. PHIL.

Wodehouse, Helen Marion	...	...	...	1907
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## M.A.

Arteaga, Fernando de	...	...	...	1907
Barnett, Arthur James	...	...	...	1901
Bévenot, Clovis	...	...	...	1901
Bleby, Mary Louise	...	...	...	1906
Butler, Arthur Wellesley	...	...	...	1907
Carpenter, Thomas Lionel	...	...	...	1906
Collins, Churton	...	...	...	1905
Dixon, William Macneile	...	...	...	1901
Elgar, Edward	...	...	...	1907
Faulkner, William	...	...	...	1905
Fiedler, Elise Minna	...	...	...	1902
Fiedler, Hermann Georg	...	...	...	1901
Handley, Marion	...	...	...	1906
Hawkes, Margaret Mellard	...	...	...	1902
Hughes, Alfred	...	...	...	1904
Lee, Winifred	...	...	...	1903
Lineham, Andrew Wood	...	...	...	1905
Loveridge, Percy Norman	...	...	...	1907
Masterman, John Howard Bertram	...	...	...	1902
May, Elsie Gertrude	...	...	...	1901
Muirhead, John Henry	...	...	...	1901
Sonnenschein, Edward Adolf	...	...	...	1901
Thomas, Henry	...	...	...	1902
Walker, Amy Jane	...	...	...	1906
Wodehouse, Helen Marion	...	...	...	1904

## M.A. (SCHOOL OF MODERN LANGUAGES).

Freeman, Amy Helen	...	...	...	1906
Woolf, Montague Sydney	...	...	...	1907

## B.A.

Armitage, Dora Kathleen	...	...	1907
Ashley, Wilfred Severn	...	...	1906
Ball, Susan	...	...	1905
Barker, Mary Ethel	...	...	1907
Bates, John Leslie	...	...	1907
Belton, Frances Nora	...	...	1907
Belton, Nelly Gwendolyn	...	...	1907
Bleby, Mary Louise	...	...	1905
Brockington, William Allport	...	...	1902
Brown, Lilian Eva	...	...	1907
Buchanan, Mary McFarlane	...	...	1906
Burchell, Lilian Anne	...	...	1906
Butler, Arthur Wellesley	...	...	1905
Campion, Ethel Elizabeth	...	...	1907
Cooke, Stella Edith	...	...	1907
Copson, Edith Emma	...	...	1907
Cutting, Ethel Sophia	...	...	1906
Davis, Amy	...	...	1903
Davies, Ellen Elizabeth	...	...	1906
Dearnley, Edith	...	...	1907
Doughty, Ethel May	...	...	1907
Douglas, Ella Winifred	...	...	1902
Fitter, Lilian Emily	...	...	1907
Forbes, Melanie Sophie	...	...	1907
Freeman, Amy Helen	...	...	1906
Frizell, Edith Annie	...	...	1905
Gibson, Elizabeth Beatrice	...	...	1907
Gough, Minnie Margaret	...	...	1907
Handley, Marion	...	...	1903
Hannah, Emily Clair	...	...	1906
Hartley, Mary Forrest	...	...	1906
Hawkes, Margaret Mellard	...	...	1901
Hill, Edith Millicent	...	...	1906
Hipkins, John Charlton	...	...	1906
Holloway, Ettie Gertrude	...	...	1906
Hughes, Edith Grace	...	...	1907
Irvine, Louise Jane	...	...	1905
Jackson, Francis Edgar	...	...	1902

Jennings, Editha Helena	...	...	1907
Jones, Winifred Marguerite	...	...	1907
Joyce, Anne Hollingworth	...	...	1904
Katz, Jacques	...	...	1905
Kirk, Richard Thomas Francis	...	...	1901
Lee, Winifred	...	...	1902
Linney, Gertrude	...	...	1907
Lloyd, Jessie Lilian	...	...	1907
Loach, Arthur William	...	...	1906
Loveridge, Percy Norman	...	...	1906
Mackintosh, Christina Alice	...	...	1904
McKinnell, Flora Eastaway	...	...	1906
Marchant, Anne Jane	...	...	1901
Mason, Lottie Beatrice	...	...	1904
Minahan, Rosa	...	...	1905
Moon, Melita Mary Annie	...	...	1904
Murray, John Claude	...	...	1905
Overton, Elsie Mai	...	...	1905
Payton, Margaret Evelyn	...	...	1904
Phillips, Amy Lilian	...	...	1906
Plant, David Wallace	...	...	1903
Priestman, Lilian Ada	...	...	1907
Smith, Elizabeth Emma	...	...	1907
Smith, Jane Ingham	...	...	1903
Smith, Mary Eliza Beatrice	...	...	1905
Storer, Eleanor Louisa	...	...	1907
Taylor, Matilda	...	...	1905
Taylor, Venetta Lillian	...	...	1905
Thomas, Elsie Lilian Poyser	...	...	1906
Tidmarsh, Elsie Isabel	...	...	1906
Turner, Edith	...	...	1907
Vernon, Evelyn Lorna	...	...	1907
White, Eric Arthur	...	...	1906
White, Jessie	...	...	1905
Wilkinson, Edith Mary	...	...	1907
Wragge, Harriet	...	...	1904
Wyatt, Alfred John	...	...	1903

## FACULTY OF MEDICINE.

## M.D.

Browne, Henry William Langley	...	1902
Evans, John Jameson	...	1903
Fowler, Thomas Webb	...	1906
Hird, Robert Beatson Dennis	...	1906
Lloyd, Jordan	...	1904
Mackey, Leonard George Joseph	...	1907
Motteram, Henry Prince	...	1902
Orton, John	...	1902
Owen, David Charles Lloyd	...	1902
Polson, James Ronald	...	1903
Potts, William Alexander	...	1903
Robinson, Arthur	...	1905
Sisam, William	...	1903
Stanley, John Douglas	...	1904
Townsend, Arthur Allen Deykin	...	1903
Weaver, Alfred Ernest Remmett	...	1906
Webb, Thomas Law	...	1903
Wilkes, George Arthur	...	1902

## CH.M.

Hewetson, John Thomas	...	1904
Leedham-Green, Charles Albert	...	1904
Marsh, Frank	...	1906
Nuthall, Alexander Wathen	...	1906
Wilson, Thomas	...	1904

## M.B. AND CH.B.

Aitken, Robert Wallace	...	1906
Astbury, Reginald Hudson	...	1906
Atkins, John Francis	...	1902
Austin, John Staines	...	1906
Barnes, Arthur Stanley	...	1903
Baylis, Henry	...	1902
Beazeley, Tom William	...	1904
Belcher, George Clement	...	1901
Bennett, William Edward	...	1902
Bracey, Herbert Charles Horace	...	1907

Bradford, Cordley...	...	...	1903
Brown, Harold Corser ...	...	...	1903
Browne, Henry William Langley	...	...	1901
Bunting, Edward Lancelot ...	...	...	1905
Burd, Reginald Shirley ...	...	...	1901
Bywater, Ernest Frederick Wharton...	...	...	1903
Caut, Arthur ...	...	...	1901
Cant, William John ...	...	...	1902
Carruthers, Walter Donald ...	...	...	1906
Chapman, Walter ...	...	...	1902
Charsley, Gilbert William ...	...	...	1901
Clendinnen, William McEntire ...	...	...	1902
Cook, William ...	...	...	1904
Crowe, Henry Neville ...	...	...	1907
Cureton, Edward ...	...	...	1901
Davies, Fred Thomas Hollway ...	...	...	1906
Deakin, Frank Newstead ...	...	...	1906
Emanuel, Joseph George ...	...	...	1902
Emery, Arthur ...	...	...	1901
Fenton, James ...	...	...	1907
Flewitt, Charles York ...	...	...	1904
Fowler, Thomas Webb ...	...	...	1901
Gettings, Cuthbert Keay ...	...	...	1904
Glissan, Francis Reginald D'Alton ...	...	...	1905
Godson, John Edward ...	...	...	1901
Greenwood, Frank Redmayne ...	...	...	1903
Hadley, Leonard Leigh ...	...	...	1905
Hall, Frederick James Vincent ...	...	...	1901
Harcourt, Charles Harold ...	...	...	1901
Hawley, Arthur ...	...	...	1901
Hill, George Leonard ...	...	...	1901
Hincks, Arthur Cecil ...	...	...	1906
Hird, Robert Beatson Dennis ...	...	...	1905
Horton, William Claude ...	...	...	1905
Houghton, William Cuthbert ...	...	...	1905
Jackson, Wilfrid Anthony Legh ...	...	...	1901
Johnson, Claude ...	...	...	1907
Jones, Harold Bruce ...	...	...	1906
Jordan, John Furneaux ...	...	...	1903
Kneale, James Coole ...	...	...	1903

Lawrence, Sidney Cameron	...	...	1904
Leedham-Green, Charles	...	...	1901
Lloyd, Jordan	...	...	1902
Longley, John Augustus Noel	...	...	1902
Longmore, Tom	...	...	1901
Loxton, William Arthur	...	...	1904
Lunn, Cyril Reginald	...	...	1902
Lyster, Robert Arthur	...	...	1902
Mackey, Leonard George Joseph	...	...	1905
Marsh, Frank	...	...	1905
Maskew, Charles Henry	...	...	1906
Mason, Philip James	...	...	1907
Motteram, Henry Prince	...	...	1901
Nuthall, Alexander Wathen	...	...	1904
Orford, Herbert John	...	...	1901
Orton, John Orton	...	...	1901
Owen, David Charles Lloyd	...	...	1901
Page, Edward Ferdinand	...	...	1901
Penrose, Nevill Coghill	...	...	1907
<i>Pepper, Henry William (the late)</i>	...	...	1901
Perry, Sidney Herbert	...	...	1903
Pickerill, Henry Percy	...	...	1905
Polson, James Ronald	...	...	1902
Pooler, Harry William	...	...	1901
Pooler, John Read	...	...	1903
Prosser, Astley Bennett	...	...	1901
Quirke, Michael Joseph	...	...	1901
Ravenhill, Thomas Holmes	...	...	1905
Roberts, Walter Rowland Southall	...	...	1906
Rollason, Norman John Lancelot	...	...	1905
Sanders, Arthur Addison	...	...	1907
Sisam, William	...	...	1901
Smith, Arthur John	...	...	1907
Smith, Priestley	...	...	1901
Stanley, Arthur John	...	...	1901
Stewart, Helen Gertrude	...	...	1906
Thompson, Rupert Wesley	...	...	1907
Townsend, Arthur Allen Deykin	...	...	1901
Utting, Horace Ebbage	...	...	1902
Walker, Spencer Graham	...	...	1906

Warren, Herbert Henry	...	...	1907
Weaver, Alfred Ernest Remmett	...	...	1904
Webb, Thomas Law	...	...	1901
Whitcombe, Edmund Bancks	...	...	1901
Wilkes, George Arthur	...	...	1901
Wilkinson, Frederick	...	...	1905
Wynn, William Henry	...	...	1903
Young, Francis Brett	...	...	1907

## M.D.S.

Humphreys, John	...	...	1901
Huxley, Frank Earle	...	...	1901
Round, Harold	...	...	1902

## B.D.S.

Astbury, Reginald Hudson	...	...	1905
Bowater, William	...	...	1906
Parrott, Arthur Hughes	...	...	1903
Pickerill, Henry Percy	...	...	1904
Round, Harold	...	...	1901
Wellings, Alfred William	...	...	1903
Whittles, John Dencer	...	...	1901

## B.Sc. (PUBLIC HEALTH).

Barwise, Sidney	...	...	1902
Hawley, Sidney Herbert	...	...	1905
Lyster, Robert Arthur	...	...	1905
Motteram, Henry Prince	...	...	1903
Sisam, William	...	...	1905

## FACULTY OF COMMERCE.

## M.Com.

Ashley, William James	...	...	1902
Dicksee, Lawrence Robert	...	...	1903
Kirkaldy, Adam Willis	...	...	1907

## B.Com.

Austin, Harold Austin	...	...	1906
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Bland, Wilfred	...	...	...	...	1905
Edge, Cyril Barrows	...	...	...	...	1905
Green, William Herbert	...	...	...	...	1907
Holroyd, John Othic	...	...	...	...	1906
Lawton, Frederick	...	...	...	...	1906
Mellor, John Leslie	...	...	...	...	1906
Sanders, Thomas Henry	...	...	...	...	1905
Tasaki, Shinji	...	...	...	...	1906
Thomas, Basil Lewis	...	...	...	...	1905

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DIPLOMAS.

## DIPLOMA IN PUBLIC HEALTH.

Bonis, Francis William	...	...	...	...	1901
Bywater, Ernest Frederick Wharton	...	...	...	...	1907
Currie, John Ronald	...	...	...	...	1904
Dawson, Thomas	...	...	...	...	1904
Dyson, Thomas Edward	...	...	...	...	1902
Lyster, Robert Arthur	...	...	...	...	1901
Sims, Aaron	...	...	...	...	1901
Turner, Robert	...	...	...	...	1901
Wood, Andrew Hamilton	...	...	...	...	1907

## TEACHERS' DIPLOMA.

## HIGHER.

Hannah, Emily Clair	...	...	...	...	1905
Mackintosh, Christina Alice	...	...	...	...	1904
Plant, David Wallace	...	...	...	...	1904
Wodehouse, Helen Marion	...	...	...	...	1903
Wyatt, Horace Graham	...	...	...	...	1904

## GENERAL.

Davis, Herbert Valentine	...	...	...	...	1904
Douglas, Ella Winifred	...	...	...	...	1902
Evans, Henry Edgar	...	...	...	...	1901
Hannah, Emily Clair	...	...	...	...	1904
Henry, Albert Ernest	...	...	...	...	1904
Sutcliffe, Annie Boardal	...	...	...	...	1901
Wynn, William Benjamin	...	...	...	...	1902

## SECONDARY.

Bartindale, Guy Cecil ...	...	...	1907
Cherrington, Violet Mary ...	...	...	1905
Dunkley, Daisy Adelaide ...	...	...	1906
Fayerman, Florence Margaret ...	...	...	1905
Johnson, Florence Margaret Mayfield			1906
Martin, Edgar Charles ...	...	...	1906
Newton, Mary Winifred ...	...	...	1905
Overton, Elsie Mai ...	...	...	1906
Payton, Margaret Evelyn ...	...	...	1905
Standing, Margaret ...	...	...	1906

## MINING DIPLOMA.

Assinder, Arthur Cecil Frederick	...	...	1907
Dare, Norman Fielden ...	...	...	1907
Fidoe, John Walter ...	...	...	1904
Franks, Philip Hamilton ...	...	...	1907
Statham, Ira Cycil Frank ...	...	...	1907
Whitehouse, James ...	...	...	1905

## BREWING DIPLOMA.

Ainley, William Henry ...	...	...	1907
Bexon, Joseph Donald ...	...	...	1901
Cooke, Richard Ernest ...	...	...	1902
Dupree, William ...	...	...	1903
Elliott, William Blake ...	...	...	1901
Gibbons, John ...	...	...	1903
Grant, Thomas Edward ...	...	...	1903
I'Anson, Antony Atkinson Whitfield ...			1906
Jones, Archdale Mercer ...	...	...	1902
<i>Jones, William Vincent</i> ...	...	...	1904
King, William Gavin ...	...	...	1904
Lathbury, George Lionel ...	...	...	1904
Mears, Frank Charles ...	...	...	1904
Millar, Edmund ...	...	...	1904
Milward, Philip Alfred ...	...	...	1907
Morley, Thomas Henry ...	...	...	1901
Oliver, Brian Edward ..	..	..	1904
Phillips, Manasseh ...	..	..	1905
Raine, Sydney ...	..	..	1905
Robottom, Charles Henry ...	...	...	1902

Rudgard, Charles Walter	...	...	1902
Russell, Clive	...	...	1905
Ryland, Chawner	...	...	1904
Seabrooke, Frank Gordon	...	...	1903
Smith, Ivan Joyce	...	...	1905
Wenman, Norman Parkes	...	...	1906
White, Sydney John	...	...	1905

**HONOURS.****AT B.Sc. DEGREE.**

Ashford, Florence (Geology)	...	...	1902
Barlow, Thomas Morgan (Electrical Engineering)	...	...	1906
Barrow, Fred (Chemistry)	...	...	1903
Cox, Arthur Hubert (Chemistry and Geology)	...	...	1904
Fisher, William Ernest (Mechanical Engineering)	...	...	1906
Friend, John Albert Newton (Chemistry)	...	...	1902
Galloway, Mabel (Zoology)	...	...	1907
Grove, Alfred John (Zoology)	...	...	1907
Lowe, Harold Newton (Chemistry)	...	...	1907
Mason-Jones, Archibald John (Geology)	...	...	1906
Merritt, Onera Amelia (Zoology)	...	...	1902
Newton, Ethel (Zoology)	...	...	1907
Phillips, Percy (Physics)	...	...	1901
Pipe, Thomas Sylvanus (Electrical Engineering)	...	...	1905
Silvester, Clara Emily (Geology)	...	...	1906
Todd, George William (Physics)	...	...	1907
Tunbridge, Edward William (Mechanical Engineering)	...	...	1905
Twiss, Douglas Frank (Chemistry)	...	...	1902
Wilkes, Samuel John Herbert (Mechanical Engineering)	...	...	1906
Whitehouse, James (Mining)	...	...	1906
Whitehouse, Richard Henry (Zoology)	...	...	1907

**AT B.A. DEGREE.**

Kirk, Richard Thomas Francis (Latin, Greek, and French)	...	...	1901
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## ASSOCIATES OF MASON COLLEGE.

ELECTED.

Addenbrooke, Edward Homfray, M.R.C.S.	1897
Ainsworth, William Brown, B.A. (Lond.)	1890
Austin, John Worsley, M.A. (Lond.)	1892
Barnes, Frank, F.R.C.S. (Eng.), M.B., M.S. (Lond.)	1900
Barratt, John Oglethorpe Wakelin, M.D., B.Sc. (Lond.)	1884
Barrett, Helen Mary, M.A. (Lond.)	1897
Baylis, Walter Henry, B.A. (Lond.)	1890
Beck, Charles Ridgeway, A.I.C.	1890
Billington, William, M.B.	1900
Blake, James Edward Huxley, B.A. (Cantab.), B.Sc. (Lond.)	1887
Blakesley, Henry John, F.R.C.S.	1897
Bond, Francis Thomas, M.D. (Lond.)	1897
Branson, Guy Joseph, B.A., M.B. (Lond.)	1890
Brockington, Alfred Allen, B.A. (Lond.)	1892
Cantrill, Thomas Crosbee, B.Sc. (Lond.)	1890
Carter, Mrs. E. M.	1890
Case, Alfred Edwin, B.Sc. (Lond.)	1899
Clayton, John Hazelwood, M.B. (Lond.)	1897
Cooper, Arthur James, B.Sc. (Lond.)	1890
Corbett, Ethel, M.A. (Lond.)	1899
Cullis, Frederick John	1890
Daniell, George Frederick, B.Sc. (Lond.)	1890
Darlaston, George Ernest, B.A. (Lond.)	1899
Edmunds, Edward William, M.A. (Lond.)	1899
Edwards, Jessie, M.A. (Lond.)	1890
Edwards, Herbert James, B.Sc. (Lond.)	1893
Elkington, Ernest Alfred, M.B. (Lond.), M.R.C.S.	1897
Ellis, Mrs. Bernard	1890
Emery, Walter d'Este, B.Sc. (Lond.)	1893
Etheridge, Arthur Thomas, B.Sc.	1900
Exell, William Wallis, B.A. (Lond.)	1890
Featherstone, William Barltrop, M.D. (Lond.)	1890
Fenby, Alaric Vincent Colpoys, B.Sc. (Lond.)	1892
Finney, William Arthur, B.A. (Lond.)	1893
Fridlander, Ernest David, B.Sc. (Lond.)	1893
Gamgee, Leonard Parker, F.R.C.S.	1893
Griffiths, John Crisp, B.Sc. (Lond.)	1893

Gregory, Charles Frederick, M.A. (Lond.) .....	1897
Hackett, John (Senior Engineering Diploma) .....	1890
Haines, Aubrey Wheeler, B.Sc. (Lond.) .....	1890
Harrold, Edith .....	1897
Hooson, John Edward, B.Sc. (Lond.) .....	1893
Housman, Basil Williams, F.R.C.S. ....	1893
Jackson, Alfred Edward (Senior Engineering Diploma)	1889
James, Elizabeth Angela .....	1890
Jenkyn-Brown, Lilian Evelyn, M.A. (Lond.) .....	1892
Jones, Oliver, B.A. (Lond.) .....	1891
Jordan, Walter Ross, M.D. (Lond.) .....	1890
Joyce, Thomas Goode, B.Sc. (Lond.) .....	1897
Kauffmann, Otto Jackson, M.D. (Lond.) .....	1900
Kellett, Alfred Featherstone, B.A. (Cantab.) .....	1890
Kidner, Norman William .....	1890
Langford, William Morris (Senior Engineering Diploma)	1888
Lay, Charles Johnson, B.A. (Cantab.) .....	1890
Ledsam, Henry Thomas Clutton Salt, B.A. (Lond.) ...	1890
Loasby, Harry Clement, B.A. (Lond.) .....	1893
Love, Ernest F. J., M.A. (Cantab.) .....	1888
Lloyd, Emily Jane, B.Sc. (Lond.) .....	1893
MacSwiney, Felix, B.A. (Lond.) .....	1890
Malins, Joseph, Jun., M.A. (Lond.) .....	1891
Marks, Lionel Simeon (Senior Engineering Diploma), B.Sc. (Lond.) .....	1891
Marks, Benjamin, B.A. (Lond.) .....	1893
Marris, William Arthur, M.D. (Lond.) .....	1898
Marson, Cyril Darby, M.R.C.S., L.R.C.P., L.D.S. ...	1898
Marson, Francis Herbert, F.R.C.S. (Eng.) .....	1896
Martin Arthur James, M.D. (Lond.) .....	1893
Mathews, Marianne .....	1890
Melson, George Hyde, M.D. (Lond.) .....	1891
Merrall, George James, B.A. (Lond.) .....	1893
Messiter, Matthew Arden, M.R.C.S. ....	1897
Miners, Bernard Perry, M.A. (Lond.) .....	1890
Myers-Ward, Charles Frederick .....	1893
Moncrieff, Lady .....	1890
Norris, Richard, M.D. .....	1897
O'Dowd, John Austin, M.B. ....	1900
Onions, Charles Talbut, M.A. (Lond.) .....	1893

## ELECTED.

Pemberton, Jane Elizabeth .....	1896
Pugh, John Vernon (Senior Engineering Diploma) ...	1897
Purslow, Charles Edwin, M.D. (Lond.), M.R.C.P. ....	1890
Reynolds, Albert Heywood, M.A. (Lond.) .....	1890
Riley, John Thomas, D.Sc. (Lond.) .....	1884
Russell, James William, M.D. (Cantab.) .....	1893
Sadler, Ernest Alfred, M.D. (Lond.) .....	1893
St. Johnston, George, M.D. (Lond.) .....	1896
Shakespeare, Gilbert Arden, B.A., B.Sc. (Lond.) .....	1897
Shedden, Arnold Ward, M.R.C.S., L.R.C.P., L.D.S. ....	1898
Sinigar, Harry, M.B. (Lond.) .....	1896
Smith, Thomas Manners, M.A., M.R.C.S. ....	1898
Snell, Ernest Hugh, M.D., B.Sc. (Lond.) .....	1890
Scouthall, Gertrude Eliza .....	1890
Stansbie, John Henry, B.Sc. (Lond.) .....	1893
Stern, Arthur Landauer, D.Sc. (Lond.) .....	1888
Stern, Rose, B.Sc. (Lond.) .....	1898
Sturge, Mary Darby, M.D. (Lond.) .....	1890
Suckling, Cornelius William, M.D. (Lond.) .....	1897
Suckling, Marianne E. ....	1897
Sudborough, John Joseph, D.Sc. (Lond.) .....	1890
Teichelmann, Ebenezer, F.R.C.S. ....	1890
Thomas, William, M.B. (Lond.), F.R.C.S. (Eng.) ....	1897
Tibbetts, Thomas Major, M.B. (Lond.), D.P.H .....	1896
Vincent, Thomas Swale, M.B. (Lond.) .....	1898
Vincent, Joseph Herbert, D.Sc. (Lond.) .....	1899
Wheatley, Arthur John (Senior Engineering Diploma)	1887
White, James Atkin Henton, M.D., F.R.C.S. ....	1897
Williams, Walter Collingwood, B.Sc. (Lond.) .....	1884
Wood, George Croft Orwin (Senior Engineering Diploma) .....	1887

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UNDERGRADUATES IN RESIDENCE  
DURING THE SESSION 1906-7

- 
- 895 Abbott, William Scott.  
918 Adams, Ernest Bryan.  
372 Adamis, John.  
539 Adams, Thomas Henry.  
732 Akimoto, Harsitomo.  
490 Allcut, Edgar Alfred.  
249 Anderson, Edward Bertram.  
699 Arlidge, John Bertram Stewart.  
190 Armitage, Dora Kathleen.  
711 Asdell, John Henry.  
673 Ash, Cecil Clive.  
371 Ashmore, William Gerald.  
777 Ashwell, Ernest.  
739 Assinder, Eric Walter.  
823 Babb, Winifred Emma.  
808 Bach, Edward.  
847 Bailey, Cecil Henry.  
369 Bailey, Charlotte.  
765 Bailey, Clement William.  
775 Bainton, Estelle.  
825 Baker, Lily Gertrude.  
209 Ball, Laurence.  
551 Bampton, James Henry.  
737 Barclay, Allen.  
575 Barker, Mary Ethel.  
716 Barrett, Victor Holmes McNaghten.  
511 Bartindale, Edith Dora.  
911 Bassett, Mary.  
866 Bates, Frank Oswald.  
269 Bates, John Leslie.  
922 Bayliss, William Thomas.  
652 Beach, Agnes.  
615 Beach, Mary.  
794 Beck, Beatrice.  
651 Beddows, Edith.  
429 Belton, Frances Nora.

- 927 Bennett, James.  
791 Berwick, Ethel Eveline.  
616 Bévenot, Nathalie Mary.  
829 Bickmore, Annie.  
863 Birch, Bernard John Mellor.  
881 Bishop, George Geoffrey Alexander.  
566 Blackham, Walter Charles.  
469 Blaker, Reginald Bromhead.  
731 Bliss, Ernest William.  
925 Bolton, Charles John Howard.  
210 Boome, Edward James.  
748 Bose, Aloke.  
581 Bose, Asok.  
544 Boswell, Norman Alexander.  
850 Bowater, Norman  
242 Bracey, Herbert Charles Horace.  
702 Bradburn, Thomas Stratford.  
681 Brewer, Florence Annie.  
890 Bridgman, Archibald John.  
662 Brooks, Norman Edmund.  
814 Britton, Frances Mabel.  
891 Brown, Harold John.  
576 Brown, Lilian Eva.  
530 Brown, Percy Charles.  
409 Browning, Harold Gordon.  
845 Bruce, Christopher Yule.  
834 Bryce, Jeanie.  
827 Buchanan, Carmen Davy.  
839 Buckler, Eric Francis.  
664 Bunting, Harry Lawrence.  
807 Burrows, Winifred.  
339 *Bushill, Thomas William.*  
870 Carrington, John Valentine.  
862 Carter, Ronald Emerson.  
446 Cavé-Brown-Cave, Nigel Frederick.  
660 Chadband, Alice May.  
785 Challingsworth, Flora.  
767 Chambers, Gwendoline Ethel Maud.  
570 Chatwin, Noel James.  
920 Chatwin, Sydney.

- 796 Clapp, Amy May.  
750 Clarke, Albert Ernest.  
757 Clarke, John Leonard.  
237 Clarke, Mary.  
838 Coleman, Robert Baxendell.  
913 Colgrave, Bertram.  
519 Cooke, Stella Edith.  
553 Copson, Edith Emma.  
678 Corkish, Albert Edward.  
736 Cory, Mary.  
605 Court, Christopher Charles Cole.  
659 Craig, Agnes Isabel.  
860 Crawley, Robert Charles.  
803 Crew, Dorothy.  
611 Cross, Edgar Algernon.  
813 Crossley, Cyril.  
623 Currall, Edward Percy.  
543 Cuthbertson, Hilda.  
276 Dale, John.  
676 Dane, Arthur.  
905 Daubeny, Ulric Evan.  
800 Davies, Annie Mary.  
876 Davies, Evan.  
812 Davis, Esther.  
199 Davis, Herbert Valentine  
773 Day, Christina Collin.  
590 De, Satis Chandra.  
500 Dearnley, Edith.  
656 Devey, May Frances.  
464 Dickinson, Ralph.  
719 Dixon, Gertrude Mary.  
501 Doughty, Ethel May.  
846 Dugard, Percy William.  
479 Duncan, Emily Grace.  
899 Earle, Harold Thomas.  
805 Edginton, Elsie Winifred.  
415 Edwards, John Selwyn.  
510 Edwards, Lawrence Wright.  
233 Eglinton, Clara.  
883 Elkington, George Ernest.

- 897 Elsdon, George Davidson.  
524 Elwell, John Batty.  
7 Evans, Harvey Atkins.  
816 Evans, Horace George.  
780 Everest, Arthur Ernest.  
776 Ewen, Donald.  
906 Eyles, Edward Godfrey.  
250 Fenton, James.  
754 Fiddian, James Victor.  
261 Findley, Albert Edward.  
574 Fitter, Lilian Emily.  
744 Florendine, Thomas Arthur.  
758 Floyd, George.  
565 Forbes, Melanie Sophie.  
799 Foster, Dorothy.  
778 Foster, Evelyn Mary.  
746 Fox, Cyril Sankey.  
751 Fox, Vivian Francis Eling.  
648 Foyle, Ada Ellen.  
865 Franks, Philip Hamilton.  
533 Galloway, Mabel.  
901 Garnier, Pierre Francois.  
714 Garratt, Harry.  
224 Gaunt, Eric Thomas.  
223 Gaunt, John Kennedy.  
928 Gell, Harold Marriot.  
507 Gibson, Elizabeth Beatrice.  
708 Gibson, Frances Millicent.  
596 Gifford, Randolph Douglas.  
787 Gilbert, Ethel Annie.  
793 Gill, Annie Eleanor.  
537 Glassey, Carlotta Primrose.  
874 Glassey, Stanley Churchill.  
889 Glover, Herbert.  
763 Goldsmith, Bernard Harry.  
717 Goodey, Tom.  
841 Goodwin, Evelyn Fanny.  
804 Gough, Arthur Trevor.  
532 Gough, Minnie Margaret.  
650 Green, Florence.

- 389 Green, George Wilfred Acland.  
931 Green, Margaret Minna.  
488 Green, William Herbert.  
823 Greensill, Bernard Heynes.  
455 Greenway, Noel Wilson.  
626 Griffiths, Benjamin Millard.  
597 Grist, Henry Noel.  
836 Grout, John Lewis Anderton.  
505 Grove, Alfred John.  
627 Gunns, Hubert Frank.  
587 Hafiz, Abdul.  
634 Hague, Arthur.  
398 Hale, Harry William.  
903 Hammond, Herbert.  
914 Hampson, Travis.  
642 Hampton, Harold Watchorn.  
701 Harby, Harry Wilfred.  
298 Harmar, Cuthbert Izon.  
363 Harrison, Ernest Claud.  
921 Harrison, Gladys.  
667 Hatfield, Henry Arnold.  
670 Haughton, John Leslie.  
924 Hawley, Herbert.  
680 Haylett, Charles Henry.  
858 Haynes, Bernard Mayo.  
381 Hayward, Charles William.  
612 Heath, Joseph.  
647 Hicks, Alice.  
614 Hicks, Hermann.  
749 Hilbourne, George Mathias.  
849 Hildick, Allan.  
859 Hill, Arthur Harry.  
811 Hill, Esher Mary.  
504 Hill, George Baillie.  
888 Hilmy, Riad.  
741 Holden, Oscar Madeley.  
822 Holliday, Catherine Elizabeth.  
636 Holroyd, Thomas Herbert.  
644 Honniball, Victor Fred.  
774 Hood, Olive Eleanora.

- 697 Hooper, Rowley Shillito.  
638 Horsley, Edwin James.  
640 Horsnall, William Edgar.  
454 Hough, Sidney John.  
536 Hughes, Edith Grace.  
608 Hughes, Violet Harriet.  
704 Humpherson, Elsie Mary.  
593 Humphreys, Humphrey Francis.  
783 Humphries, Clarrie Maud.  
604 Impey, Elizabeth Stephens.  
529 Jenkins, Frederic Reynolds.  
437 Jennings, Editha Helena.  
722 Jesse, Richard Henry Bishop.  
932 Jewsbury, William.  
683 Johnson, Frederick.  
809 Jones, Charles Crawford.  
657 Jones, Elsie Maud.  
738 Jones, William Herbert.  
545 Jones, Winifred Marguerite.  
851 Jope, Francis Edward.  
603 Jordan, Lionel Gilbert.  
20 Jotham, George Frederick.  
843 Kapp, Norman Gisbert.  
645 Kapp, Reginald Otto.  
710 Kaye, William Cyril.  
658 Keeling, Mary Elizabeth.  
558 Keene, Horace Borton.  
852 Kelland, Arthur Bertie.  
516 Kerr, Alexander Parker Thomas.  
362 Kershaw, Lawrence William.  
272 Knight, Arthur Noel Stanley.  
649 Knight, Marion Enid.  
833 Lancaster, James Norman.  
887 Lavender, Frederic Henry Reakes.  
826 Leach, Mary Sumner.  
513 Ledbrook, Sydney William.  
705 Lee, Irene Olive.  
837 Leese, Cyril Ewart.  
857 Leng, Herbert William.  
923 Leonard, George Samuel.

- 893 Leslie, Robert Dunbar.  
197 Lightfoot, Mildred.  
555 Linney, Gertrude.  
864 Linnitt, Charles Frederick.  
904 Lister, Algernon Hamilton.  
208 Lloyd, Bertram Arthur.  
568 Lloyd, Jessie Lilian.  
855 Lodge, Raymond.  
508 Lowe, Harold Newton.  
877 Lowe, Thomas.  
740 Macfarlane, Alan Grant.  
580 Majumdar, Pruja Krishna.  
654 Madan, Annie Harriett.  
523 Magrath, William Thomas.  
643 Mansell, Walter Cyril.  
764 Marris, George Christopher.  
894 Marsh, Roland.  
898 Marten, Austen Winfield.  
788 Martin, Amelia Marion.  
912 Martin, Francis Grimshaw.  
241 Mason, Philip James.  
368 McCready, Violet Maud.  
619 McQueen, William Andrew.  
878 Meyer, Stanislas Benedict.  
875 Milward, Ethel Mary.  
497 Milward, Katie Millicent.  
633 Mills, Mary Grace.  
815 Minahan, Clara.  
689 Mitsui, Tucker Key-yo.  
810 Moir, Leonard Rae.  
747 Mokadam, Baliram Pandurang.  
270 Mold, George Henry Chavasse.  
755 Molino, Carl Euclide.  
379 Moon, George Bassett.  
665 Morris, Ernest Frederick.  
618 Morris, Leslie.  
784 Morris, Lilian.  
882 Morse, Thomas Riddings.  
625 Mott, Harold Ernest.  
867 Mountford, Arthur Wilfred.

- 824 Murphy, Lawrence Saunders.  
629 Murray, Myles Thornton.  
821 Mustard, Frederick Claud.  
492 Nelson, Ronald Douglas.  
842 Nercessiantz, Armenaque Davidovitch.  
806 Nevett, William Percy.  
601 Newton, Arthur Harry.  
534 Newton, Ethel.  
832 Newton, Percy Alfred.  
698 Norton, Harold Richard.  
768 Onions, Laura.  
861 Ottewell, Barry.  
831 Oulsnam, Christabel Mary.  
692 Pan, Chengfu.  
624 Parkes, Alan Cecil.  
709 Parry, Kathleen.  
733 Parry, Matthew Croose.  
818 Pearson, Frank Harry.  
238 Penrose, Nevill Coghill.  
641 Perry, Victor Eugene.  
885 Phillips, Bernard William.  
207 Phipson, Edward Selby.  
343 Pickup, Arthur McLean.  
915 Pigott, Noel Frederick Pemberton.  
525 Pilson, Charles Alexander.  
789 Pitman, Ruth.  
871 Pitt, Francis Samuel.  
494 Poole, Granville.  
910 Potts, Edith Potter.  
835 Prentice, Ellen.  
868 Price, John Owen.  
655 Priest, Beatrice Adeline.  
735 Pritchard, William George.  
797 Pryor, Elsie Marguerite.  
872 Ray, James Ernest.  
926 Ray, Manmatha Kumar.  
589 Read, Harry Crible.  
853 Reavenall, Alfred Cecil.  
684 Reynolds, Elsie.  
628 Richmond, Henry.

- 502 Ridsdale, John Langford Disturnal.  
340 Ritchie, George Thwaits.  
341 Ritchie, John Lichtenstein.  
606 Ritchie, William Bruce Almon.  
873 Robbins, William Alwyn.  
766 Roberts, Bernard Holtom.  
646 Roberts, Jane.  
869 Roberts, Owen Edward.  
700 Robinson, Arthur Gordon.  
720 Robinson, Arthur Gordon.  
819 Rope, Frederic Michael.  
795 Round, Margaret Helen.  
653 Sabell, Lilian Gertrude.  
917 Salt, Charles Ernest.  
759 Salt, Lizzie Godwin.  
399 Sampson, Herbert Henry.  
214 Sanders, Arthur Addison.  
591 Sanders, Frank.  
688 Sandilands, John Gordon.  
772 Sceaney, Rosa.  
745 Sen, Ajit Mohan.  
598 Seyfried, John Thaddeus de.  
663 Sheasby, Hilda Mabel.  
639 Sheldon, Harry.  
884 Shen, Buechok.  
499 Sherratt, Ellen.  
930 Slim, George Edmundson.  
770 Smallwood, Frank Theodore.  
361 Smart, John Deiro.  
383 Smith, Charles Gordon.  
196 Smith, David Priestley.  
771 Smith, Edith Rosina.  
554 Smith, Elizabeth Emma.  
522 Smith, Gavin Hildick.  
879 Smith, Leonard Warren.  
484 Smith, Louis Victor.  
637 Smith, Percy.  
515 Smith, Richard Hugh.  
518 Smith, Sidney.  
817 Smith, William Arthur.

- 613 Smith, William Lester.  
671 Sonnenschein, Christopher Edward.  
528 Stafford, Thomas Sidney.  
364 Stanford, Robert Viner.  
820 Stanger, Annie Louisa.  
840 Starkey, Clara Beatrice.  
620 Stephen, George Duncan.  
496 Storer, Eleanor Louisa.  
599 Stoward, Frederick.  
769 Stuart, Mary.  
900 Stuart, Murray.  
856 Summers, Owen Heather.  
588 Sutherns, Harry Davis.  
486 Swann, Ann Mary Goodrick.  
929 Swinglehurst, Richard Henry.  
448 Taylor, Charles Henry.  
798 Taylor, Constance Reed.  
762 Taylor, Fred.  
491 Taylor, Harry.  
367 Terry, Harold Cairns.  
909 Thomas, Dora Retallack.  
782 Thompson, Elsie Lilian Olivia.  
266 Thompson, Rupert Wesley.  
97 Thwaite, Harold.  
602 Tibbits, Arthur Christopher.  
682 Tildesley, Horace William.  
512 Titterton, May.  
560 Todd, George William.  
792 Toy, Kathleen Nora.  
703 Troughton, Beatrice Helen.  
933 Tucker, Norman.  
908 Tunstall, Winifred Maria.  
182 Turner, Edith.  
621 Twigg, William Henry.  
674 Tyers, Mildred Anice.  
919 Vallance, Reece Henry.  
540 Vernon, Evelyn Lorna.  
672 Villiers, Percy William.  
844 Vokes, Kathleen Hilda.  
486 Waldron, Ethel Annie.

- 526 Walker, Cranston.  
830 Walkerdine, Adelaide Amy.  
622 Walter, Cecil Montague.  
916 Walters, William.  
62 Ward, Ellen.  
907 Ward, William Geoffrey.  
779 Warth, Edwin Frederick.  
790 Watson, Inez.  
357 Watson, Ernest Ansley.  
675 Watson, Lily.  
742 Wandby, Frederic.  
801 Weavers, Elsie Matilda.  
718 Webb, Henry.  
514 Westcott, Victor Reginald.  
892 Whalley, Ralph Thomas.  
462 Whitby, Edward Vernon.  
41 Whitecombe, Harold Arthur.  
584 Whitehouse, Richard Henry.  
666 Whiting, William James.  
661 Whittingham, Frederick.  
734 Wiggett, James Marshall.  
854 Wilkes, Addie.  
760 Wilkinson, Alan Ayscough.  
495 Wilkinson, Edith Mary.  
548 Wilkinson, Kenneth Douglas.  
520 Wilks, Harry.  
2 Williams, Norman Valentine.  
802 Wilson, Dora Alice.  
786 Wilson, Jessie Hannah.  
487 Wilmot, Stanley Birley.  
696 Woodhouse, John.  
610 Woods, Grace Catlin.  
313 Woolf, Montague Sydney.  
896 Wright, Ernest Harold.  
880 Wright, Frank William.  
498 Wright, Margaret Dorothea.  
609 Wynn, Albert Edward.  
781 Yeoman, Clara Dorothy.  
635 Young, Sydney John.

## STUDENTS ATTENDING CLASSES DURING SESSION 1906-7.

### STUDENTS IN SCIENCE, ARTS, AND COMMERCE.

Abbott, Cyril Edward.	Bailey, Clement William.
Abbott, William Scott.	Bainton, Estelle.
Acton, Elizabeth.	Baker, Edith.
Adams, Ernest Bryan.	Bamford, Gerald.
Adams, Thomas Henry.	Bantock, Mrs. G.
Ainley, William Henry.	Barclay, Allen.
Akimoto, Harsitomo.	Barlow, Thomas Morgan.
Alkin, John Eric.	Barrett, Victor Holmes
Allcut, Edgar Alfred.	McNaughten.
Alexander, Justice Featherstone Haugh.	Bartindale, Guy Cecil.
Alldridge, Dorothy Louise.	Bassett, Mary.
Allingham, Catherine.	Bates, John Leslie.
Almond, James Birkett.	Baxter, Kenneth Murray.
Anderson, Edward Bertram.	Bayliss, Jessie Sproat.
Andrews, Frederick Dudley.	Beach, Mary.
Argyle, John Basil.	Bean, Gertrude.
Arlidge, John Bertram Stewart.	Beatson, Archibald Meade.
Armitage, Dora Kathleen.	Belton, Frances Nora.
Ash, Cecil Clive.	Beddoes, Harold.
Ashburnham, Cromer.	Betts, Arthur Oliver.
Ashcroft, Charles Edwin.	Bévenot, Gaston.
Asdell, John Henry.	Bévenot, Nathalie Mary.
Ashford, Lydia Bright.	Bladon, Harold Edward.
Ashley, Wilfred Severne.	Blaker, Reginald Bromhead.
Ashmore, William Gerald.	Blay, William Frederick.
Ashwell, Ernest.	Bleby, Mary Louise.
Assinder, Arthur Cecil Frederick.	Bliss, Ernest William.
Aston, Francis William.	Blurton, Walter Robert.
Auster, Herbert William.	Bolton, Charles John Howard.
Bache, Harold Godfrey.	Bolton, Edward John.
Bailey, Cecil Henry.	Bose, Aloke.
	Bose, Asok.
	Bostock, William Henry Dor-
	man.
	Bowater, Norman.

- Bowen, William.  
 Bradbridge, Beatrice.  
 Brand, William Jermyn.  
 Brookes, Alfred Eric Fincher.  
 Brooks, Norman Edmund.  
 Britton, Frances Mabel.  
 Broscombe, Frederick James.  
 Bruce, Christopher Yule.  
 Brown, Gladys Muriel.  
 Brown, Joseph.  
 Brown, Percy Charles.  
 Buchanan, Carmen Davy.  
 Buckler, Eric Francis.  
 Bullen, George.  
 Bunting, Harry Lawrence.  
 Burrows, Winifred.  
*Bushill, Thomas William.*  
 Butler, Arthur Wellesley.  
  
 Caddick, Helen.  
 Campion, Ethel Elizabeth.  
 Carter, Mrs. Eric M.  
 Carter, Margaret Elizabeth  
     Mary.  
 Carter, Ronald Emerson.  
 Caulkin, Howard Alfred.  
 Cave-Brown-Cave, Nigel  
     Frederick.  
 Chamberlain, Charlotte.  
 Chamberlain, Ida.  
 Chamberlain, Percy Garratt.  
 Chapivzet, M. L.  
 Chatwin, Noel James.  
 Chatwin, Sydney.  
 Cheshire, Harry Rowland.  
 Clarke, John Leonard.  
 Cobos, Isaias Ignacio Gon-  
     zalez.  
 Colgrave, Bertram.  
 Cook, Leonard Reynolds.  
  
 Cooke, Stella Edith.  
 Cooksey, Wilfrid Maurice.  
 Cory, Mary.  
 Coulson, Alfred.  
 Coxon, Frank Maurice.  
 Crawley, Robert Charles.  
 Crees, Henry William.  
 Cross, Edgar Algernon.  
 Crossley, Cyril.  
 Currall, Edward Percy.  
 Cuthbertson, Hilda.  
  
 Dallow, Norman Richard.  
 Dare, Norman Fielden.  
 Daubeny, Ulric Evan.  
 Davies, Cyril.  
 Davies, Emilie.  
 Davis, Ernest Louis.  
 Davis, Esther.  
 Davis, Herbert Valentine.  
 Daw, Ernest Albert Harris.  
 Daw, Herbert Harris.  
 Dawson, Reginald.  
 De, Satis Chandra.  
 Dickenson, Ralph.  
 Dixon, Mrs. A. S.  
 Dixon, Mary.  
 Dixon, Tom Douglas.  
 Dixon, George Humphz  
     Stansfeld.  
 Dobson, Thomas.  
 Dougall, Percy.  
 Dowler, Theresa Maude.  
 DuBern, Lionel Emile.  
 Duncan, Emily Grace.  
  
 Earle, Harold Thomas.  
 Edginton, Elsie Winifred.  
 Edwards, Edgar Maurice.  
 Ellis, Sidney John.

- Elsdon, George Davidson.  
Elwell, John Batty.  
Evans, Alfred Dudley.  
Evans, Horace George.  
Everest, Arthur Ernest.  
Ewen, Donald.  
Ewen, William Knowles.  
Eyles, Edward Godfrey.
- Farquharson, James.  
Felton, Frank Leslie.  
Fentiman, C. A.  
Fiedler, Mrs. H. G.  
Finch, Dorothy Annie.  
Findley, Albert Edward.  
Fisher, William Ernest.  
Fletcher, Arthur Philip.  
Fletcher, Francis Duncan.  
Forrest, Norman.  
Forsyth, Robert Byers.  
Foster, Evelyn Mary.  
Fox, Cyril Sankey.  
Franks, Philip Hamilton.
- Galloway, Mabel.  
Ganderton, Charles Milner.  
Garnier, Pierre Francois.  
Garrett, Ronald Thornbury.  
Gell, Catherine Marion.  
Gell, Harold Marriott.  
Gibbs, Harry.  
Gifford, Randolph Douglas.  
Glen, John Calder.  
Goldsmith, Bernard Harry.  
Goodwin, Evelyn Fanny.  
Goring, Friedrich.  
Gossett, William Sealy.  
Gough, Arthur Trevor.  
Gough, Minnie Margaret.  
Graff, Hans
- Grayston, George Arthur.  
Green, George Wilfrid Aeland.  
Green, Margaret Minna.  
Green, Mrs. W. M.  
Green, William Herbert.  
Greenway, Noel Wilson.  
Griffith, Roy de Gorreguer.  
Griffiths, Arthur Benjamin.  
Griffiths, Arthur Edwin.  
Grist, Henry Noel.  
Grout, Sydney.  
Grove, Alfred John.  
Grove, Arthur Beaumont.  
Grove, Emily Florence.  
Gunnis, Ronald Stuart.
- Hadley, Ada.  
Hadley, Mrs. W.  
Hafiz, Abdul.  
Hague, Arthur.  
Hall-Wright, Horatio Ellington.  
Hannah, Emily Clair.  
Harby, Harry Wilfred.  
Harris, Philip Dawson.  
Harrison, Arnold.  
Harrison, Ernest Claude.  
Harrison, Gladys.  
Haughton, John Leslie.  
Hawkes, Mrs. R. J. J.  
Hawley, Herbert.  
Haynes, Bernard Mayo.  
Hemming, Albert Edward.  
Henley, Edith Mary.  
Hickmans, Evelyn Marion.  
Hicks, Hermann.  
Higby, Charles Edward.  
Higby, William Robert Foster.  
Hildick, Allan.  
Hill, Esther Mary.

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|--|-------------------------------------|
| Hilmy, Riad.                           | Kershaw, Lawrence William.          |
| Hill, George Baillie.                  | Knight, Arthur Noel Stanley.        |
| Holden, Winifred.                      | Lampitt, Leslie Herbert.            |
| Hole, William Westcott.                | Lancaster, James Norman.            |
| Holmes, Donald Francis.                | Langley, Arthur Sydney.             |
| Homan, Edward Noel St.<br>John Leslie. | Larkin, Sydney.                     |
| Honniball, Victor Fred.                | Lavender, Frederic Henry<br>Reakes. |
| Hooper, Oswald Stokes.                 | Lavender, John Herbert.             |
| Hooper, Rowley Shillito.               | Leach, Mary Sumner.                 |
| Hough, Sidney John.                    | Leach, Samuel Bernard.              |
| Howe, Gerald Bernard.                  | Ledbrook, Sydney William.           |
| Howe, William.                         | Lee, Irene Olive.                   |
| Howell, William John.                  | Lee, Winifred.                      |
| Humphreys, Christine.                  | Leslie, Robert Dunbar.              |
| Hunter, Cyril James.                   | Lightfoot, Mildred.                 |
| Icke, John Henry Townsend.             | Linney, Gertrude.                   |
| Janan, Henry.                          | Lister, Algernon Hamilton.          |
| Jeff, Alfred Henry.                    | Lloyd, Edyth.                       |
| Jephcott, Ernest Woodward.             | Lobley, Henry Denzil.               |
| Jewsbury, William.                     | Lodge, Raymond.                     |
| Joberns, Bolton.                       | Lodge, Violet M. A.                 |
| John, Sydney Clement.                  | Longford, Clara Dorothy.            |
| Johnson, Frederick.                    | Lovatt, Harry Leslie Bache.         |
| Jones, Edgar George.                   | Loveridge, Percy Norman.            |
| Jones, Edward Victor.                  | Lynes, Walter Henry.                |
| Jones, Mary.                           | Mackay, Hugh Alan.                  |
| Jones, Reginald Edward.                | Macfarlane, Alan Grant.             |
| Joseph, Erica.                         | Mackie, Douglas Runnels.            |
| Kapp, Norman Gisbert.                  | Maddison, Mary Gildon.              |
| Kapp, Reginald Otto.                   | Magrath, William Thomas.            |
| Katz, Jacques.                         | Majumdar, Pruja Krishna.            |
| Kaye, William Cyril.                   | Marris, George Christopher.         |
| Kelly, Arthur Joseph.                  | Marsh, Roland.                      |
| Kelsey, Benjamin George.               | Martin Austen Winfield.             |
| Kerr, Alexander Parker<br>Thomas.      | Martin, Francis Grimshaw.           |
|  | Martineau, Evelyn Mary.             |
|  | Mason, Leonard.                     |

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|--|--|
| Mason-Jones, Archibald John.             | O'Sullivan, Hugh Henry.                |
| Mathews, George Vyvyan.                  | Osborne, Frank Clive.                  |
| McKechnie, Duncan.                       | Ottewell, Barry.                       |
| McKinnell, Flora Eastaway.               | Oxley, Frank.                          |
| McQueen, William Andrew.                 |  |
| Menke, Katharine Elizabeth.              | Palmer, Donald Ashford.                |
| Meyer, Stanislas Benedict.               | Pan, Chengfu.                          |
| Mills, Mansfeldt Charles<br>Nightingale. | Parkes, Alan Cecil.                    |
| Mills, Mary Grace.                       | Parmiter, Ada Louisa.                  |
| Millward, Frank Ernest.                  | Parry, Ethel.                          |
| Millward, Philip.                        | Parry, Matthew Croose.                 |
| Milward, Ethel Mary.                     | Partridge, Gertrude Mary.              |
| Mitsui, Tucker Key-yo.                   | Pass, Frederick Lindo de.              |
| Mitton, Eric John.                       | Pearson, Frank Harry,                  |
| Miyasaki, Isami.                         | Pearson, Stanley.                      |
| Moir, Leonard Rae.                       | Pemberton, Miss J. E.                  |
| Mokadam, Baliram Pan-<br>durang.         | Pemberton, Thomas Hooke<br>Child.      |
| Molina, Juan Gabriel.                    | Phillips, Bernard William.             |
| Morley Eric George.                      | Pickering, Basil Henry.                |
| Morris, Leslie.                          | Pigott, Noel Frederick Pem-<br>berton. |
| Morse, Thomas Riddings.                  | Pilkington, Lionel George.             |
| Mott, Harold Ernest.                     | Pilson, Charles Alexander.             |
| Murphy, Lawrence Saunders.               | Pinson, Kenneth Bernard.               |
| Murray, Myles Thornton.                  | Pitt, Harry Leacroft.                  |
| Mustard, Frederick Claud.                | Plant, Charles Henry.                  |
| Myer, Mrs. J. H. R.                      | Plant, David Wallace.                  |
| Myers, Mrs. George.                      | Poole, Granville.                      |
| Nazih, Moustapha.                        | Poole, Stephen Carey.                  |
| Nercessiantz, Armenaque<br>Davidovitch.  | Pooler, Frederick John.                |
| Nevett, William Percy.                   | Potts, Edith Potter.                   |
| Nevile, Bernard.                         | Powell, Clarence Henry.                |
| Newton, Ethel.                           | Prosser, Lilian Mary.                  |
| Nicholls, John Gordon.                   | Prosser, Mabel Eliza.                  |
| Nickson, Horace Clarence.                | Purslow, Alice Maud.                   |
| Nicol, Herbert Erskine.                  |  |
| Nimmo, Miss M. J.                        | Ray, Maumatha Kumar.                   |
| Norton, Harold Richard.                  | Read, Harry Crible.                    |
|  | Reavenall, Alfred Cecil.               |

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|-------------------------------|-----------------------------|
| Reeve, Howard Teesdale.       | Shervinton, William Hugh    |
| Richards, Albert Edward.      | Byam.                       |
| Richards, Henry.              | Shilson, William.           |
| Ridsdale, John Langford Dis-  | Sibley, Thomas Franklin.    |
| turnal.                       | Silvester, Clara Emily.     |
| Rigby, Emily.                 | Simeox, William Martin.     |
| Riley, Arthur Croome.         | Simon, Sylvia Marion.       |
| Ritchie, George Thwaits.      | Slim, George Edmundson.     |
| Ritchie, William Bruce Almon. | Smallman, Spencer.          |
| Roberts, Bernard Holtom.      | Smallwood, Frank Theodore.  |
| Roberts, William Daniel.      | Smart, John Deiro.          |
| Robinson, Alfred.             | Smith, Arthur Eric.         |
| Robinson, Arthur Gordon.      | Smith, Charles Gordon.      |
| Robinson, Claude Alleyne.     | Smith, Edward Raymond       |
| Robson, Vivian Erwood         | Byron.                      |
| Rope, Frederic Michael.       | Smith, Emma Marguerite.     |
| Rosedale, John Lewis.         | Smith, Frederick Stnart.    |
| Ryland, Henry.                | Smith, Gavin Hildick.       |
| <br>                          | Smith, Leonard Warren.      |
| Salt, Lizzie Godwin.          | Smith, Louis Victor.        |
| Saltren-Willett, Charles      | Smith, Marion.              |
| Geoffrey.                     | Smith, Richard Hugh.        |
| Sambidge, John Raymond.       | Smith, Sidney.              |
| Sandbach, Mrs.                | Smith, William Arthur.      |
| Sanders, Frank.               | Smith, William Lester.      |
| Sanders, Thomas Davidson.     | Somers, Marie Louise Geor-  |
| Sandford, Arthur Herbert      | gette Usher.                |
| Edgar.                        | Somers, Noble Luke Usher.   |
| Sandilands, John Gordon.      | Sonnenschein, Christopher   |
| Sansom, Mary Beatrice.        | Edward.                     |
| Schurhoff, Mrs. Gustav.       | Sowden, Mary Eliza.         |
| Schuss, Heinrich.             | Sowerbutts, Edith U.        |
| Scott, Gilbert Shaw.          | Spratt, Mary.               |
| Sen, Ajit Mohan.              | Stanford, Robert Viner.     |
| Seyfried, John Thaddeus de.   | Stanton, Beatrice Mary.     |
| Shaw, Eva St. Clair.          | Stanton, Herbert Julian.    |
| Shaw, Malcolm Ian Bell.       | Starkey, Clara Beatrice.    |
| Sheasby, Hilda Mabel.         | Statham, Ira Cyril Frank.   |
| Shen, Bucchok.                | Steedman, Philip Shaftmoor. |
|                               | Stephen, George Duncan.     |

Stoward, Frederick.  
Strathy, Jessie Lyall Lee.  
Stuart, Mary.  
Stuart, Murray.  
Summers, Owen Heather.  
Swann, Ann Mary Goodrick.  
Swann, Florence Alice.  
Swinglehurst, Richard Henry.  
  
Taylor, Charles Henry.  
Taylor, Frances Evelyn.  
Taylor, Fred.  
Taylor, Harry.  
Taylor, Kathleen Helen.  
Taylor, Sydney Cyril.  
Teague, Francis Clifford  
    Dyche.  
Tharme, Harry.  
Thomas, Dora Retallack.  
Thompson, Frank.  
Thompson, Merrick Arnold  
    Bardsley.  
Thompson, William Gordon.  
Tildesley, Horace William.  
Titterton, May.  
Tomkinson, Dora Sloane.  
Trench, Frederic FitzCurrie.  
Trollip, Arthur Stanley.  
Troughton, Beatrice Helen.  
Tsao, Hui Chun.  
Tucker, Norman.  
Tucker, Percy Alexander.  
Tunstall, Winifred Maria.  
Turner, Edith.  
Turner, Gladys.  
Turner, Margaret.  
Twigg, William Henry.  
  
Uren, Arthur Harold.

Vallance, Reece Henry.  
Vernon, Evelyn Lorna.  
Villiers, Percy William.  
  
Wagner, Miss J. M.  
Wainwright, Edward William.  
Walker, Arthur Oldfield.  
Walker, James Follett  
    Folingsby.  
Walker, Mary.  
Walter, Cecil Montagne.  
*Walters, William.*  
Ward, Ellen.  
Ward, James Walter.  
Ward, William Geoffrey.  
Ward, William Wilfred.  
Warmington, Annie.  
Warth, Edwin Frederick.  
Watson, Ernest Ansley.  
Waudby, Frederic.  
Weber, Hanna.  
West, Thomas Valentine.  
Westcott, Victor Reginald.  
White, Arthur Edward.  
White, Charles Arthur.  
Whitehead, Norman Craven.  
Whitehouse, Henry Bickerton.  
Whitehouse, Richard Henry.  
Whitehouse, Wilfred Eric.  
Whitehouse, William Henry.  
Whiting, William James.  
Whittles, Cyril Leonard.  
Wilkes, Addie.  
Willmore, Mary.  
Willson, Harry Claude.  
Wilmot, Stanley Birley.  
Williamson, George Havard.  
Wilson, Edward.  
Wiseman, Gladys Mary.  
Wood, Edmund Baddeley.

Woods, Grace Catlin.  
 Woodhouse, John.  
 Woolf, Montague Sydney.  
 Woolner, Harold Sterling.  
 Worsey, Edward Henry.  
 Wrage, Johannes Emil.  
 Wyllie, Alexander.

Wynn, Albert Edward.  
  
 Yang, Tseng Kao.  
 Yeh, Tsin Hsin.  
 Young, John.  
 Young, Sydney John.

## STUDENTS IN MEDICINE.

Adams, John.  
 Allen, Richard Clayton.  
 Amber, Mary Felton.  
 Ashton, William Frederick Ewart.  
 Assinder, Eric Walter.

Bach, Edward.  
 Bailey, Charlotte.  
 Ball, Laurence.  
 Bampton, James Henry.  
 Bates, Howard James.  
 Beazeley, Tom William.  
 Beddowes, Edward Charles.  
 Bhathena, Soral-Jamasji.  
 Billington, Sidney Guy.  
 Birrell, William Francis.  
 Blackham, Walter Charles.  
 Boome, Edward James.  
 Booth, William Richard Ward.  
 Boswell, Norman Alexander.  
 Bracey, Herbert Charles Horace.  
 Bradburn, Thomas Stratford.  
 Bridge, John Frederick.  
 Brown, Henry Skinner.  
 Brown, Thomas Percy.  
 Browne, Henry Montague.  
 Browning, Harold Gordon.

Bywater, Ernest Frederick Wharton.  
  
 Carruthers, Walter Donald.  
 Chamberlain, Gertrude.  
 Chesters, Eric Horsfall.  
 Clarke, Mary.  
 Cochrane, Samuel Thomas.  
 Coleman, Henry Norreys.  
 Coleman, Robert Baxendell.  
 Court, Christopher Charles Cole.  
 Cox, Hubert.  
 Crew, Francis Albert Eley.

Dabbs, Arthur Josiah.  
 Dale, John.  
 Davies, Evan.  
 Dawson, Thomas.  
 Dearden, Alicia.  
 Dockrell, Emily Marion.  
 Dunbar, Josephine.  
  
 East, Edwin Charles.  
 Eberhardt, Fred Charles.  
 Edwards, John Selwyn.  
 Eglington, Clara.  
 Elkington, George Ernest.  
 Eskell, Richard Lisle.  
 Evans, Harvey Atkins.

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|-----------------------------|---------------------------------|
| Faulkner, Charles Repton.   | Jones, Charles Crawford.        |
| Fenton, James.              | Jordan, Joseph Bagnall.         |
| Fiddian, James Victor.      | Jordan, Lionel Gilbert.         |
| Fisher, Frederick Pearson.  | Jotham, George Frederick.       |
| Fisher, Frederick Thomas.   |                                 |
| Forbes, Armitage Litton     | Kent, Thomas Howard.            |
| Edward Frederick.           | Kilroe, Wilfred.                |
| Fox, Vivian Francis Eling.  | Knight, Arthur Thirlby.         |
| Gadgil, Shridhar Bhukagee.  | Lewis, Denis.                   |
| Gaunt, Eric Thomas.         | Lloyd, Bertram Arthur.          |
| Gaunt, John Kennedy.        | Mackaness, Charles Lawrence.    |
| Goodman, Montague           | Mackenzie, George Henry.        |
| Nathaniel.                  | Marriott, Elsie.                |
| Goodwin, Bernard Grainger.  | Marston, Christopher Claud.     |
| Greensill, Bernard Heynes.  | Mason, Philip James.            |
| Grout, John Lewis Anderton. | Matthews, Leonard Clive.        |
| Hampson, Travis.            | Matthews, Lewis Trevor Bamford. |
| Harper, James Eder.         | McCready, Violet Maud.          |
| Harmar, Cuthbert Izon.      | Middleton, Francis George.      |
| Harrington, Arthur Joseph.  | Mold, George Henry Chavasse.    |
| Harris, Joseph Cecil.       | Molino, Carl Euclide.           |
| Hawthorne, Charles Barnard  | Moon, George Bassett.           |
| Hayward, Charles William.   | Mullins, William Baker.         |
| Hodgson, Robert.            |                                 |
| Holder, Oscar Madeley.      | Nelson, Ronald Douglas.         |
| Holman, George.             | Newton, Arthur Harry.           |
| Holroyd, Thomas Herbert.    | Newton, Percy Alfred.           |
| Huddleston, George James    | Nicholas, Clarence William.     |
| Proctor.                    | Noott, Reginald Harry.          |
| Hughes, Olive.              | Pardhy, Krishna Moreshwar.      |
| Humpherson, Elsie Mary.     | Payton, Ronald Victor.          |
| Humphreys, Humphrey         | Penrose, Nevill Coghill.        |
| Francis.                    | Pereira, Charles Philip         |
| Impey, Elizabeth Stephens.  | Augustine de.                   |
| Jeffries, Thomas Neville.   |                                 |
| Jennens, John Harry.        |                                 |

Phillips, Sybil.  
 Phipson, Edward Selby.  
 Pickup, Arthur McLean.  
 Pickup, William Howard.  
  
 Radford, Marion.  
 Richmond, Henry.  
 Ritchie, John Lichtenstein.  
 Roberts, Alexander James.  
 Roberts, Llewellyn Isaac Hilton.  
 Rollinson, Harry Dudley.  
 Ross-Watt, George Douglas.  
  
 Salt, Charles Ernest.  
 Sampson, Herbert Henry.  
 Sanders, Arthur Addison.  
 Sansom, Wilfrid Tom.  
 Scott, Alfred Gladstone.  
 Scott, James.  
 Shilton, Frederick Walton.  
 Shovelton, Sydney.  
 Smith, Annie Isabel.  
 Smith, Bertha Duke.  
 Smith, David Priestley.  
 Smith, George Percy.  
 Spackman, William Colls.  
 Stafford, Thomas Sidney.  
 Stanley, John Brentnall.  
 Suthaby, Stella.

Terry, Harold Cairns.  
 Theobald, Annie Florence.  
 Thompson, Charles Joseph.  
 Thompson, Frederick.  
 Thompson, Rupert Wesley.  
 Thwaite, Harold.  
 Tibbits, Arthur Christopher.  
 Tildesley, Josiah Percival.  
 Turner, Harry Alfred.  
  
 Waldron, Ethel Annie.  
 Walker, Cranston.  
 Watson, William Norman West.  
 Weaver, Alfred Ernest Remmett.  
 Weaver, Edward Algernon.  
 Webb, Martha Beatrice.  
 Whitcombe, Harold Arthur.  
 Whitby, Edward Vernon.  
 Wild, George Kerry.  
 Wilkinson, Alan Ayscough.  
 Wilkinson, Kenneth Douglas.  
 Wilks, Harry.  
 Williams, Norman Valentine.  
 Willis, Dorothy Myee.  
 Willis, Mrs. F.  
 Wilson, Lucy.  
 Wood, Emily Caine.  
  
 Young, Irene Clara.

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### STUDENTS IN THE TRAINING COLLEGES

Alecock, Florence.  
 Anderton, Bertha Agnes.  
 Antcliff, Winifred Laura Annie.

Appleby, Violet.  
 Babb, Winifred Emma.  
 Baker, Lily Gertrude.

Baldwin, Norah Lilian.	Cooper, Ella Louise.
Barker, Mary Ethel.	Copson, Edith.
Barker, William.	Corkish, Albert.
Barlow, Frances Elizabeth.	Craig, Agnes Isabel.
Bartindale, Edith Dora.	Craig, Jessie Florence.
Bates, Frank Oswald.	Crew, Dorothy.
Bayliss, William Thomas.	
Beach, Agnes.	Dalley, Catherine Rose.
Beck, Beatrice.	Dane, Arthur.
Beddows, Edith.	Davies, Annie Mary.
Bennett, James.	Day, Christina Collin.
Berry, Charlotte.	Dearnley, Edith.
Berry, Lucy.	Devey, May Frances.
Berwick, Ethel Eveline.	Dillon, Winifred Mary.
Bickmore, Annie.	Dixon, Gertrude Mary.
Birch, Bernard John Mellor.	Done, Arthur.
Bishop, George Geoffrey Alexander.	Doughty, Ethel May.
Blake, Ethel Maud.	Drinkwater, Mary Elizabeth.
Booth, Eliza.	Dugard, Percy William.
Bourne, Christopher Henry.	Dye, Ruth Esther.
Brewer, Florence Annie.	
Bridgman, Archibald John.	Edwards, Lawrence Wright.
Brittle, Elsie.	Eland, John Edment.
Brown, Harold John.	Evans, Charles Leonard.
Brown, Lilian Eva.	Evans, Margaret Annie.
Bryce, Jeanie.	
Carrington, John Valentine.	Fitter, Lilian Emily.
Chadband, Alice May.	Florendine, Thomas Arthur.
Challingsworth, Flora.	Floyd, George.
Chambers, Gwendoline Ethel Maud.	Forbes, Melanie Sophie.
Churm, Harold.	Foster, Dorothy.
Clapp, Amy May.	Foyle, Ada Ellen.
Clarke, Albert Ernest.	French, Elizabeth Marion.
Clayton, Beatrice.	Fry, Minnie Tucker.
Clive, Mabel.	
Colgrave, Ethel.	Galletley, Leonard.
Cooper, Edith May.	Garratt, Harry.
	Garrett, Agnes Mary.
	Gibson, Elizabeth Beatrice.
	Gibson, Frances Millicent.

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|--------------------------------|------------------------------|
| Gilbert, Ethel Annie.          | Jenkins, Frederic Reynolds.  |
| Gill, Annie Eleanor.           | Jennings, Editha Helena.     |
| Glassey, Carlotta Primrose.    | Jesse, Richard Henry Bishop. |
| Glassey, Stanley Churchill.    | Joesbury, Lilian.            |
| Glendon, Ruby Doreas.          | Jones, Elsie Maud.           |
| Glover, Herbert.               | Jones, William Herbert.      |
| Goode, Elsie Isabella.         | Jones, Winifred Marguerite.  |
| Goodey, Tom.                   | Jope, Francis Edward.        |
| Green, Florence.               |                              |
| Griffin, Alice May.            | Keeling, Mary Elizabeth.     |
| Griffiths, Benjamin Millard.   | Keene, Horace Borton.        |
| Gunns, Hubert Frank.           | Kelland, Arthur Bertie.      |
|                                | Kemshall, Gwendoline Mary.   |
| Hale, Eva May.                 | Kidner, Hilda Mary.          |
| Hale, Harry William.           | Knight, Marion Enid.         |
| Hall, Edith Annie.             |                              |
| Hall, Sarah Ann.               | Laffey, Margaret.            |
| Hammond, Herbert.              | Lane, Nelly Vernon.          |
| Hampton, Harold Watchorn       | Leese, Cyril Ewart.          |
| Hare, Maggie.                  | Leng, Herbert William.       |
| Hatfield, Henry Arnold.        | Leonard, George Samuel.      |
| Haylett, Charles Henry.        | Lewis, Constance.            |
| Heath, Joseph.                 | Linnitt, Charles Frederick.  |
| Hennessy, Bridget.             | Lloyd, Jessie Lilian.        |
| Hicks, Alice.                  | Lowe, Clarence Joseph.       |
| Hilbourne, George Mathias.     | Lowe, Harold Newton.         |
| Hill, Arthur Harry.            | Lowe, Thomas.                |
| Hill, Margaret May.            | Lythall, Frank Herbert.      |
| Hinton, John Frederick.        |                              |
| Hobley, Mabel Gertrude.        | Madan, Annie Harriett.       |
| Holliday, Catherine Elizabeth. | Mausell, Walter Cyril.       |
| Hood, Olive Eleanora.          | Martin, Amelia Marion.       |
| Hooper, Jessie.                | Milward, Katie Millicent.    |
| Horsley, Edwin James.          | Minahan, Clara.              |
| Hornsall, William.             | Mitchell, Eliza.             |
| Hughes, Edith Grace.           | Moffatt, Winifred Edith.     |
| Hughes, Violet Harriet.        | Morris, Ernest Frederick.    |
| Humphries, Clarrie Maud.       | Morris, Lilian.              |
| Hutelinson, Clara Louie.       | Mountford, Arthur Wilfred.   |

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|----------------------------|--------------------------------|
| Neal, Alice Rachel.        | Sheldon, Harry.                |
| Newman, Ethel Needham.     | Shepherd, Arthur Lewis.        |
| Norris, Nora Gladys.       | Sherratt, Ellen.               |
| Onions, Laura.             | Simpson, Jeannie Grand.        |
| Oulsnam, Christabel Mary.  | Smallwood, Lilian Gertrude.    |
| Owen, Gertrude Emily.      | Smith, Edith Rosina.           |
| Parry, Kathleen.           | Smith, Elizabeth Emma.         |
| Pascal, Norah.             | Smith, Elsie Clara.            |
| Patterson, Gladys Maltby.  | Smith, Elsie Mary.             |
| Perks, Herbert.            | Smith, Nellie.                 |
| Perry, Victor Eugene.      | Smith, Percy.                  |
| Phasey, Minnie.            | Solomon, Sara.                 |
| Phillips, Minnie Ethel.    | Stanger, Annie Louisa.         |
| Pitman, Ruth.              | Storer, Eleanor Louisa.        |
| Pitt, Francis Samuel.      | Sutherns, Harry Davis.         |
| Prentice, Ellen.           | Taylor, Constance Reed.        |
| Price, John Owen.          | Taylor, Ellen.                 |
| Priest, Beatrice Adeline.  | Taylor, Isabella Campbell.     |
| Pritchard, William George. | Terrell, Elsie Gertrude.       |
| Pryor, Elsie Marguerite.   | Thear, Alice Mary.             |
| Ralston, Jessie Maria.     | Theobald, Hilda Mary.          |
| Rainsden, Annie Teresa.    | Thomas, Llewelyn Max.          |
| Ray, James Ernest.         | Thompson, Elsie Lilian Olivia. |
| Reeves, Lucy Lena.         | Thompson, Evelyn Una Rette.    |
| Reynolds, Elsie.           | Todd, George William.          |
| Robbins, William Alwyn.    | Todd, Janet Laurie.            |
| Roberts, Jane.             | Tomalin, Lizzie.               |
| Roberts, Louisa Hiett.     | Tongue, Alice Maude.           |
| Roberts, Owen Edward.      | Toy, Kathleen Norah.           |
| Robinson, Arthur Gordon.   | Tunbridge, Beatrice May.       |
| Robinson, Winifred Mary.   | Tyers, Mildred Anice.          |
| Round, Margaret Helen.     | Underwood, Esther Amanda.      |
| Sabell, Lilian Gertrude.   | Venables, Gertrude.            |
| Sadd, Lizzie.              | Vokes, Kathleen Hilda.         |
| Seaney, Rosa.              | Walker, Ethel Louise.          |
| Secker, Esther Ann.        | Walkerdine, Adelaide Amy.      |

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|--------------------------|-------------------------------|
| Wallace, Helen.          | Willetts, Clarissa Agnes.     |
| Ward, Rose Annie.        | Williams, Elsie Mary.         |
| Watson, Inez.            | Wilson, Dora Alice.           |
| Watson, Lily.            | Wilson, Elsie Annie.          |
| Weavers, Elsie Matilda.  | Wilson, Jessie Hannah.        |
| Webb, Henry.             | Wooldridge, Hilda Marguerite. |
| Whalley, Ralph Thomas.   | Wooldridge, John Heber.       |
| Whatmore, Kathleen Mary. | Wooliscroft, Grace.           |
| Wheatcroft, William.     | Wright, Elsie.                |
| Whittingham, Frederick.  | Wright, Ernest Harold.        |
| Wiggett, James Marshall. | Wright, Frank William.        |
| Wilkinson, Edith Mary.   | Wright, Margaret Dorothea.    |
| Wilkinson, Ethel Ellen.  |                               |
| Willdey, Florence Daisy. | Yeoman, Clara Dorothy.        |

## UNIVERSITY EXAMINATIONS,

SESSION 1906-07.

## FACULTY OF SCIENCE.

—  
JUNE, 1907.

## I.—Degree of Doctor of Science.

Gibson, Walcot.  
 Imms, Augustus Daniel.  
 Phillips, Percy.

## II.—Degree of Master of Science.

Barlow, Thomas Morgan (Engineering).  
 Mason-Jones, Archibald John.  
 Parry, Ethel.  
 Scott, Gilbert Shaw (Metallurgy).  
 Smith, Charles Gordon.  
 Stanford, Robert Viner.  
 †Silvester, Clara Emily.  
 +Stoward, Frederick.  
 Stanton, Herbert Julian.

## III.—Degree of Bachelor of Science.

(a) *Official.*

Borlase, Edward Thomas.  
 Briggs, Henry.

(b) *Under Ordinary Regulations.*

## Honours Division.

Galloway, Mabel (Zoology).  
 Grove, Alfred John (Zoology).  
 Lowe, Harold Newton (Chemistry).  
 Newton, Ethel (Zoology).  
 \*Todd, George William (Physics).  
 \*Whitehouse, Richard Henry (Zoology).

## Division I.

Anderson, Edward Bertram.  
 Beach, Mary.  
 Davis, Herbert Valentine.  
 Dyche-Teague, Frances Clifford.  
 Keene, Horace Borton.

† Research Scholarship.

- University Scholarship

## Division II.

Cuthbertson, Hilda.  
 Findley, Albert Edward.  
 Hale, Harry William.  
 Humphreys, Percy James.  
 Jenkins, Frederick Reynolds.  
 Stuart, Murray.

*Passed in part of the Examination.*

Acton, Elizabeth (Botany, *Principal*).  
 Chatwin, Sydney (Physics, *Subsidiary*).  
 Clarke, Albert Ernest (Geology i., *Principal*; Pure Mathematics ii., and Applied Mathematics i., *Subsidiary*).  
 Dane, Arthur (Physics, *Subsidiary*).  
 Dixon, Gertrude Mary (Geology i., *Principal*).  
 Everest, Arthur Ernest (Physics, Pure Mathematics ii., *Subsidiary*)  
 Edwards, Lawrence Wright (Geology, *Principal*; Physics, Pure Mathematics ii., *Subsidiary*).  
 Griffiths, Benjamin Millard (Geology i., *Principal*).  
 Gunns, Hubert Frank (Pure Mathematics ii., *Subsidiary*).  
 Heath, Joseph (Geology i., *Principal*).  
 Hilbourne, George Mathias (Geology i., *Principal*).  
 Jesse, Richard Henry Bishop (Geology i., *Principal*; Zoology, *Subsidiary*).  
 Kaye, William Cyril (Physics, *Subsidiary*).  
 Pritchard, William George (Pure Mathematics ii., and Applied Mathematics i., *Subsidiary*).  
 Troughton, Beatrice Ellen (Botany and Zoology, *Subsidiary*).  
 Webb, Henry (Geology i., *Principal*).  
 Whittingham, Frederick (Pure Mathematics ii., and Applied Mathematics i., *Subsidiary*).  
 Wiggett, James Marshall (Pure Mathematics ii., and Applied Mathematics i., *Subsidiary*).

*Two Year Students eligible for Degree after a further year's attendance at the University.*

## Honours Division.

Bliss, Ernest William (Mathematics).  
 Harby, Wilfrid Harry (Chemistry).  
 Norton, Harold Richard (Chemistry).

## Division II.

Caulkin, Howard Alfred.  
 Robinson, Arthur Gordon.

## IV.—Degree of Bachelor of Science in Engineering.

## Honours Division.

Kershaw, Lawrence William (Civil Engineering).  
 Watson, Ernest Ansley (Mechanical and Electrical Engineering).

## Division I.

Green, George Wilfrid Acland.  
 Greenway, Noel Wilson.  
 Ritchie, George Thwaits.

## Division II.

Knight, Arthur Noel Stanley.  
 Smart, John Deiro.  
 Smith, Sidney.

## V.—Degree of Bachelor of Science in Mining.

## Honours Division.

Smith, Gavin Hildick (Mining).  
 Seyfried, John Thaddeus de (Mining).

## Division I.

Hafiz, Abdul.

## Division II.

De, Satis Chandra.  
 Read, Harry Crible.

## VI.—Intermediate Science.

## Division I.

Adams, Ernest Bryan.  
 Burrows, Winifred.  
 Dixon, Gertrude Mary.  
 Edginton, Elsie Winifred.  
 Elsdon, George Davidson.  
 Evans, Horace George.  
 Pitt, Francis Samuel.  
 †Shen, Buccok.  
 Walker, Cranston.  
 Whalley, Ralph Thomas.

## Division II.

Bailey, Clement William.  
 Buckler, Eric Francis.  
 Iles, Percy Henry (External).  
 Leng, Herbert William,  
 Linnitt, Charles Frederick.  
 Lloyd, Harold Charles (External).  
 Parry, Matthew Croose.  
 Tunstall, Arthur Cuthbert (External).  
 Vallance, Reece Henry.

*Completed the Examination.*

Clarke, Albert Ernest.  
 Jesse, Richard Henry Bishop.  
 Lee, Irene Olive.

*Passed in part of the Examination.*

- Baker, Lily Gertrude (Mathematics, Chemistry, Zoology).  
 Chambers, Gwendoline Ethel Maud (Mathematics, Chemistry, Zoology.)  
 Kelland, Arthur Bertie (Physics, Chemistry.)  
 Hood, Olive Eleanora (Mathematics, Chemistry, Botany).  
 Onions, Laura (Mathematics, Chemistry, Zoology).  
 Reavenall, Alfred Cecil (Physics, Chemistry).  
 Slim, George Edmundson (Physics, Chemistry).  
 Starkey, Clara Beatrice (Physics, Biology).

### VII.—Third Engineering Examination.

#### Division I.

- Gifford, Randolph Douglas.  
 \*Ledbrook, Sydney William.  
 Ridsdale, John Langford Disturnal.  
 Taylor Charles Henry.  
 Taylor, Harry

#### Division II.

- Allcut, Edgar Alfred.  
 Cave-Browne-Cave, Nigel Frederick.  
 Hough, Sidney John.  
 Pilson, Charles Alexander.  
 Smith, Richard Hugh.

*Completed the Examination.*

- Greenway, Noel Wilson.  
 Ritchie, George Thwaits.  
 Smart, John Diero.

*Passed in part of the Examination.*

- Westcott, Victor Reginald (Engineering).

### VIII.—Second Engineering Examination.

#### Division I.

- Ashwell, Ernest.  
 \*Cross, Edgar Algernon  
 Morris, Leslie.  
 Nevett, William Percy.  
 Sonnenschein, Christopher Edward.  
 Villiers, Percy William.

#### Division II.

- Ritchie, William Bruce Almon.  
 Robinson, Arthur Gordon.

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\* University Exhibition.

*Completed the Examination.*

Westcott, Victor Reginald.  
Wynn, Albert Edward.

*Passed in part of the Examination.*

- Arlidge, John Bertram Stewart (Engineering, Metallurgy).  
Asdell, John Henry (Engineering, Metallurgy).  
Bunting, Harry Lawrence (Engineering, App. Mathematics, Metallurgy).  
Gough, Arthur Trevor (Engineering, App. Mathematics, Geology).  
Kapp, Reginald Otto (Engineering, Physics, Metallurgy).  
Walter, Cecil Montague (Engineering, App. Mathematics, Metallurgy).  
Walters, William (Engineering, Physics).  
Whiting, William James (Engineering, Pure Mathematics, Metallurgy).

#### IX.—First Engineering Examination.

##### Division I.

- Lobley, Henry Denzil (External).  
Marris, George Christopher.  
Moir, Leonard Rae.  
Ottewell, Barry.  
Sandilands, John Gordon.  
Summers, Owen Heather.

##### Division II.

- Bowater, Norman James.  
Crawley, Robert Charles.  
Eyles, Edward Godfrey.  
Gell, Harold Marriott.  
Mustard, Frederick Claude.  
Orchard, Harold (External).  
Rope, Frederick Michael.  
Smith, Louis Victor.  
Taylor, Fred.  
Warth, Edwin Frederick.

*Passed in part of the Examination.*

- Bolton, Charles John Howard (Physics, Chemistry, Engineering).  
Earle, Harold Thomas (Chemistry, Engineering).  
Goldsmith, Bernard Harry (Physics, Engineering).  
Hildick, Allan (Pure Mathematics, Engineering).  
Kapp, Norman Gisbert (Physics, Engineering).  
Lodge, Raymond (Physics, Engineering).  
Morse, Thomas Riddig (Physics, Engineering).  
Smith, Leonard Warren (Physics, Chemistry, Engineering)

**X.—Second Mining Examination.***Degree Candidates.*

## Division I.

Barclay, Allen.  
 Sen, Ajit Mohan.  
 Stephen, George Duncan.

## Division II.

Barrett, Victor Holmes McNaghten.  
 Fox, Cyril Sankey.  
 McQueen, William Andrew.

**XI.—First Mining Examination.***Degree Candidates.*

## Division II.

Bailey, Cecil Henry.  
 Bruce, Christopher Yule.  
 Franks, Philip Hamilton.

*Passed in part of the Examination.*

Ray, Manmatha Kumar (Mining, Geology, Surveying).

*Diploma Candidates.*

## Division I.

Statham, Ira Cyril Frank.

## Division II.

Dare, Norman Fielden.

*Completed the Examination.*

Assinder, Arthur Cecil Frederick.

*Passed in part of the Examination.*

Grist, Henry Noel (Geology).

Mokadam, Baliram Pandurang (Mining, Surveying, Geology, and Engineering).

Pickering, Basil Henry (Mining and Surveying).

Robinson, Claude Alleyne (Mining, Surveying, and Geology).

**XII.—Second Metallurgy Examination.**

## Division I.

Hague, Arthur.  
 Johnson, Frederick.  
 Murray, Myles Thornton.

*Passed in part of the Examination.*

Ewen, Donald (Metallurgy, Engineering).

## XIII.—First Metallurgy Examination.

Division II.

Ewen Donald.

*Completed the Examination.*

Hague, Arthur (Mathematics).

## XIV.—Diploma in Brewing.

Division I.

Millward, Philip Alfred.

Division II.

Ainley, William Henry.

SEPTEMBER, 1906.

## I.—B.Sc. Examination.

Jenkins, Frederic Reynolds (Physics, Pure Mathematics).

## II.—Second Engineering Examination.

*Completed the Examination.*

Smith, Richard Hugh.

*Passed in part of the Examination.*

Magrath, William Thomas (Metallurgy).

Westcott, Victor Reginald (Pure Mathematics).

## III.—Second Mining Examination.

*Completed the Examination.*

De, Satis Chandra.

## IV.—Intermediate Examination.

Class II.

Lampitt, Leslie Herbert (External Candidate).

*Completed the Examination.*

Bampton, James Henry.

Garratt, Harry.

Hall, John William.

Jenkins, Frederic Reynolds.

Kaye, William Cyril.

Lymbery, Percy Arthur Roe.

Parsons, Wilfrid.

Piper, Henry Norman.

Wilks, Harry.

## V.—First Engineering Examination.

Class I.

Villiers, Percy William.

Class II.

Ward, William Geoffrey (External Candidate).

*Completed the Examination.*

Asdell, John Henry.

Bunting, Harry Lawrence.

Kapp, Reginald Otto.

Morris, Leslie.

Walters, William.

Whiting, William James.

Wynn, Albert Edward.

*Passed in part of the Examination.*

Young, Sydney John (Chemistry).

Hicks, Hermann (Chemistry).

## VI.—First Mining Examination.

*Completed the Examination.*

Smith, Arthur Leslie.

*Passed in part of the Examination.*

Bose, Asok.

## FACULTY OF ARTS.

JUNE, 1907.

## I.—Degree of Doctor of Philosophy.

Wodehouse, Helen Marion

## II.—Degree of Master of Arts.

Butler, Arthur Wellesley (Philosophy).

Loveridge, Percy Norman (History and French).

†Woolf, Montague Sydney (School of Modern Languages, German and French).

## III.—Degree of Bachelor of Arts.

Division I.

Armitage, Dora Kathleen (Distinction in French).

Cooke, Stella Edith (Distinction in Latin).

†Fitter, Lilian Emily (Distinction in Latin, English, French and Mathematics).

† Harding Travelling Scholarship.

† University Scholarship.

Hughes, Edith Grace (Distinction in Latin).

† Jennings, Editha Helena (Distinction in Latin, English, and French).

Lloyd, Jessie Lilian (Distinction in English).

Smith, Elizabeth Emma (Distinction in English).

Storer, Eleanor Louisa (Distinction in English).

Turner, Edith (Distinction in English).

#### Division II.

Barker, Mary Ethel.

Brown, Lilian Eva

Copson, Edith Emma.

Dearnley, Edith.

Doughty, Ethel May.

Forbes, Melanie Sophie.

Gibson, Elizabeth Beatrice.

Gough, Minnie Margaret.

Jones, Winifred Marguerite.

Linney, Gertrude.

Vernon, Evelyn Lorna.

Wilkinson, Edith Mary.

#### *Completed the Examination.*

Bates, John Leslie.

Belton, Frances Nora.

Priestman, Lilian Ada.

#### *Passed in part of the Examination.*

Bartindale, Edith Dora (Latin, English and European History, *Principal*).

Duncan, Emily Grace (Latin, English and French, *Principal*).

Glassey, Carlotta Primrose (Latin, English and French, *Principal*).

Milward, Katie Millicent (Latin, French and European History *Principal*; English, *Subsidiary*).

Sherratt, Ellen (Latin, English and European History, *Principal*).

Sutherns, Harry Davis (Latin and English, *Principal*; Education, *Subsidiary*).

Swann, Ann Mary Goodrick (Latin and English, *Principal*; Ancient History, *Subsidiary*).

#### IV.—Second Examination in the School of Modern Languages.

##### Division I.

† Adams, Thomas Henry.

##### Division II.

Titterton, May.

† University Scholarship.

‡ Third Year Harding Scholarship.

## V.—Second Year Arts Examination.

- \*Beddows, Edith (Latin, English, French, Mathematics).  
 Craig, Agnes Isabel (Latin, English, French, Ancient History).  
 Gibson, Frances Millicent (Latin, English, French, Ancient History).  
 Green, Florence (Latin, English, French, Ancient History).  
 Hampton, Harold Watchorn (Latin, English, French, Ancient History).  
 Hatfield, Henry Arnold (Latin, English, French, Mathematics).  
 Haylett, Charles Henry (Latin, English, French, Ancient History).  
 Hughes, Violet Harriet (English, French, Ancient History).  
 Jones, William Herbert (Latin, English, French, Ancient History).  
 Jones, Elsie Maude (English, French, Ancient History).  
 Madan, Annie Harriett (Latin, English, French, Ancient History).  
 \*Mills, Mary Grace (Latin, English, French, Mathematics).  
 Morris, Ernest Frederick (Latin, English, French, Philosophy).  
 Parry, Kathleen (Latin, English, French, Ancient History).  
 Priest, Beatrice Adeline (Latin, English, French, Ancient History).  
 Sabell, Lilian Gertrude (Latin, English, French, Ancient History).  
 Sheldon, Harry (English, Ancient History).  
 Sheasby, Hilda Mabel (Latin, English, French, Mathematics).  
 Stuart, Mary (English).  
 Tyers, Mildred Anice (English, French).  
 Woods, Grace Catlin (Latin, English, French, Mathematics).  
 Wright, Margaret Dorothea (Latin, English, French).

## VI.—First Examination in the School of Modern Languages.

## Division I

††Green, Margaret Minna.

## Division II.

‡Phillips, Bernard William.

## VII.—Intermediate Arts Examination.

## Division I.

- Bassett, Mary.  
 \*Bayliss, William Thomas.  
 Beddows, Edith.  
 Bishop, George Geoffrey Alexander.  
 Colgrave, Bertram.  
 Craig, Agnes Isabel.  
 Jope, Francis Edward.  
 Leach, Mary Sumner.  
 Madan, Annie Harriett.

\* Bracketted for University Exhibition.

† University Exhibition.

‡ Second Year Harding Scholarship.

Parry, Kathleen.  
 Robbins, William Alwyn.  
 \*Smallwood, Frank Theodore.  
 Wright, Frank William.

## Division II.

Glassey, Stanley Churchill.  
 Hughes, Violet Harriet.  
 Lowe, Thomas.  
 Mansell, Walter Cyril.  
 Murphy, Lawrence Saunders.  
 Pearson, Frank Harry.  
 Priest, Beatrice Adeline.  
 Tyers, Mildred Anice.

*Completed the Examination.*

Gibson, Frances Millicent.  
 Green, Florence.  
 Jones, Elsie Maude.  
 Sabell, Lilian Gertrude.  
 Sheldon, Harry.  
 Whitehouse, Wilfred Eric.

*Passed in part of the Examination.*

Bainton, Estelle (Latin, English, French, German).  
 Beck, Beatrice (Latin, English, French, Logic).  
 Bickmore, Annie (Latin, English, French).  
 Birch, Bernard John Mellor (Latin, English, French, Logic).  
 Britton, Frances Mabel (English, French, Botany).  
 Bryce, Jeanie (English, French, Logic).  
 Court, David Henry (Latin, English, Education).  
 Crew, Dorothy (Latin, English, French, Logic).  
 Davies, Annie Mary (Latin, English, French).  
 Davis, Esther (Latin, English, French, Geography).  
 Day, Christina Collin (Latin, English, French, Mathematics).  
 Floyd, George (Latin, English, French, British Institutions).  
 Foster, Evelyn Mary (Latin, English, French, German).  
 Gill, Annie Eleanor (Latin, English, French, Logic).  
 Goodwin, Evelyn Fanny (Latin, English, French, German).  
 Hammond, Herbert (Latin, English, French).  
 Harrison, Gladys (English, French, Education).  
 Hill, Arthur Harry (Latin, English, French, German).  
 Hill, Esther Mary (Latin, English, French, Botany).  
 Holliday, Catherine Elizabeth (Latin, English, French).  
 Leonard, George Samuel (Latin, English, British Institutions).  
 Martin, Amelia Marion (Latin, English, French).  
 Oulsnam, Christabel Mary (Latin, English, French).  
 Perry, Victor Eugene (Latin, English, Mathematics).

- Pitman, Ruth (Latin, English, French, Mathematics).  
 Pryor, Elsie Marguerite (Latin, English, French, Logic).  
 Round, Margaret Helen (Latin, English, French).  
 Stanger, Annie Louisa (Latin, English, French).  
 Taylor, Constance Ree*i* (Latin, English, French, Mathematics).  
 Thomas, Dora Retallack (English, Logic, Botany).  
 Toy, Kathleen Nora (Latin, English, French, Mathematics).  
 Watson, Inez (Latin, French, Mathematics).  
 Watson, Lily (Mathematics).  
 Wilkes, Addie (Latin, English, French, German).  
 Wilson, Dora Alice (Latin, English, French, Mathematics).  
 Wilson, Jessie Hannah (Latin, English, French, Logic).

**VIII.—Entrance Examination to School of Modern Languages.**

Division II.

Maddison, Mary Gildon.

**IX.—Secondary Teachers' Diploma Examination.**  
 Bartindale, Guy Cecil.

SEPTEMBER, 1906.

**I.—B.A. Examination.**

*Completed the Examination.*

Belton, Nelly Gwendolyn.  
 Campion, Ethel Elizabeth.

*Passed in part of the Examination.*

Priestman, Lilian Ada (European History).

**II.—Second Year Examination.**

- Barker, Mary Ethel (French).  
 Brown, Lillian Eva European History).  
 Brown, Percy Charles (European History).  
 Duncan, Emily Grace (Mathematics).  
 Gibson, Elizabeth Beatrice (European History).  
 Gough, Minnie Margaret (Mathematics).  
 Milward, Katie Millicent (Latin, French, European History).  
 Sutherns, Harry Davis (Latin, French).

**III.—Intermediate Examination.**

Class I.

†Green, Margaret Minna.

Class II.

†Phillips, Bernard William.

—+ Bracketted for a Harding Scholarship.

*Completed the Examination.*

Hampton, Harold Watchorn.  
 Hatfield, Henry Arnold.  
 Haylett, Charles Henry.  
 Jones, William Herbert.  
 Palmer, Herbert Edward.  
 Sutherns, Harry Davis.

*Passed in part of the Examination.*

Gibson, Frances Millicent (English History).  
 Green, Florence (Logic).  
 Honniball, Victor Fred (British Institution).  
 Jones, Elsie Maud (French).  
 Sabell, Lilian Gertrude (Latin).  
 Sheldon, Harry (Mathematics).

**FACULTY OF MEDICINE.**

JUNE 1907.

## I.—Degree of Doctor of Medicine.

Mackey, Leonard George Joseph.

## II.—Degrees of Bachelor of Medicine and Bachelor of Surgery.

(a) *Past Student of Birmingham Medical School.*

Ashton, William Frederick Ewart.

(b) *Under Ordinary Regulations.*

## Class II.

Bracey, Herbert Charles Horace  
 \*Fenton, James.  
 Mason, Philip James.  
 Penrose, Nevill Coghill.  
 Sanders, Arthur Addison.  
 Smith, Arthur John.  
 Thompson, Rupert Wesley.  
 Warren, Herbert Henry.

III.—Fourth Examination for the Degrees of  
M.B., Ch.B.

## Class I.

\*Dale, John.

\* Queen's Scholarship.

† Ingleby Scholarship.

## Class II.

- Adams, John.  
 Bailey, Charlotte.  
 Mold, George Henry Chavasse.  
 Smith, David Priestley.  
 Terry, Harold Cairns.  
 Whitby, Edward Vernon.

IV.—Third Examination for the Degrees of M.B.,  
Ch.B.

## PART I.—PATHOLOGY AND BACTERIOLOGY.

## Class I.

- \*Sampson, Herbert Henry.

## Class II.

- Blackham, Walter Charles.  
 Boswell, Norman Alexander.  
 Browning, Harold Gordon.  
 Clarke, Mary.  
 Edwards, John Selwyn.  
 Evans, Harvey Atkins.  
 Humphreys, Humphrey Francis.  
 Jotham, George Frederick.  
 McCready, Violet Maud.  
 Ritchie, John Lichtenstein.  
 Terry, Harold Cairns.  
 Waldron, Ethel Annie.  
 Wilkinson, Kenneth Douglas.

## PART II.—MATERIA MEDICA AND PHARMACY.

## Class I.

- \*Sampson, Herbert Henry.

## Class II.

- Blackham, Walter Charles.  
 Boswell, Norman Alexander.  
 Browning, Harold Gordon.  
 Clarke, Mary.  
 Humphreys, Humphrey Francis.  
 Mold, George Henry Chavasse.  
 Molino, Carl Euclid.  
 Ritchie, John Lichtenstein.  
 Waldron, Ethel Annie.  
 Whitcombe, Harold Arthur.  
 Wilkinson, Kenneth Douglas.

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\* Queen's Scholarship.

V.—Second Examination for the Degrees of M.B.,  
Ch.B.

Class II.

- Assinder, Eric Walter.  
 \*Holden, Oscar Madeley.  
 Impey, Elizabeth Stephens.  
 Nelson, Ronald Douglas.

*Completed Examination.*

- Hayward, Charles William.  
 Newton, Arthur Harry.

*Passed in part of the Examination.*

Pickup, Arthur McLean (*Physiology and Comparative Anatomy*).  
 Richmond, Henry (*Biology*).

VI.—First Examination for the Degrees of M.B.,  
Ch.B.

Class I.

- Elkington, George Ernest.

Class II.

- Davies, Evan.  
 Court, Christopher Charles Cole.  
 Grout, John Lewis Anderton.  
 Hampson, Travis.  
 Jones, Charles Crawford.  
 Tibbits, Arthur Christopher.  
 Tonkinson, Albert Joseph (*External*).  
 Wilkinson, Alan Ayscough.

*Completed Examination.*

- Salt, Charles Ernest.

*Passed in part of the Examination.*

Alabaster, George Herbert (*External*), (*Chemistry and Physics*).  
 Coleman, Robert Baxendell (*Physics and Biology*).  
 Fox, Vivian Francis Eling (*Chemistry and Biology*).  
 Newton, Percy Alired (*Chemistry and Biology*).

VII.—Second Examination for the Diploma in  
Dental Surgery.

- Wilkinson, Alan Ayscough.

VIII.—Diploma in Public Health.

Parts I. and II.

- Bywater, Ernest Frederick Wharton.

— Queen's Scholarship.

## Part I.

Beazeley, Tom William.  
Weaver, Alfred Ernest Remmett.

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SEPTEMBER, 1906.

I.—Third Examination for the M.B., Ch.B. Degrees  
*Materia Medica and Practical Pharmacy.*

Sanders, Arthur Addison.  
Terry, Harold Cairns.  
Williams, Norman Valentine.

II.—Second Examination for the M.B., Ch.B. Degrees.

Bampton, James Henry (Physiology).  
Edwards, John Selwyn (Comparative Anatomy).  
Hayward, Charles William (Anatomy, Comparative Anatomy).  
Moon, George Bassett (Physiology, Comparative Anatomy).  
Newton, Arthur Harry (Comparative Anatomy).  
Thompson, Charles Joseph (Anatomy).  
Wilks, Harry (Physiology).

III.—First Examination for the M.B., Ch.B. Degrees.

Class II.

Salt, Charles Ernest (External Candidate).

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JANUARY, 1907.

Examination for the Diploma in Public Health.

Parts I. and II  
Wood, Andrew Hamilton.

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FACULTY OF COMMERCE.

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JUNE, 1907.

I.—Degree of Bachelor of Commerce.  
Division I.  
Green, William Herbert.

*Passed in part of the Examination.*

Mitsui, Tucker Keyyo (Commerce, Technique of Trade, Public Finance).

**II.—Second Examination for the Degree of  
B.Com.**

Division II.

Twigg, William Henry.

*Completed the Examination.*

Green, William Herbert (Transport).

*Passed in part of the Examination.*

Hilmy, Riad (Commerce, Transport).

Hooper, Rowley Shillito (Commerce, Accounting, Transport, Economic Analysis).

Kerr, Alexander Parker Thomas (Commerce, Transport, German, Engineering).

Mott, Harold Ernest (Commerce, Accounting, Transport, German, Spanish, Engineering).

Pan, Chengfu (Commerce, Accounting, Transport, European History).

Tildesley, Horace William (Commerce, Accounting, Economic Analysis, Transport, German, British Institutions).

**III.—First Examination for the Degree of  
B.Com.**

Division II.

Garnier, Pierre François.

Martin, Austen Winfield.

Meyer, Stanislas Benedict.

*Passed in part of the Examination.*

Hilmy, Riad (Commercial Geography).

Nercessiantz, Armenaque (Accounting).

SEPTEMBER, 1906.

**Second Examination for the Degree of B. Com.**

*Passed in part of the Examination.*

Green, William Herbert.

**MATRICULATION EXAMINATION.**

JULY, 1907.

Class I.

Allen, Annie, Smethwick Pupil Teachers' Central Classes.

Barnes, Eliza Mary Ann, George Dixon Secondary School, Birmingham.

- Bévenot, Gaston, University of Birmingham.  
Blaxland, John Bruce, St. Edward's School, Oxford.  
Brazier, Sidney Albert, Waverley Road Secondary School, Birmingham.  
Brewster, Philip, Bedales School, Petersfield.  
Briscoe, Frederick John, Waverley Road Secondary School, Birmingham.  
Burford, Dorothy Mary, Birmingham Pupil Teachers' Central Classes.  
Catherall, Arthur Philip, King Edward's School, Birmingham.  
Connolly, John Newman, George Dixon Secondary School, Birmingham.  
Cooksey, Wilfrid Maurice, University of Birmingham.  
Cox, Dorothy Cécile, George Dixon Secondary School, Birmingham.  
Damon, William Ethelbert, Bedford Grammar School.  
Edmunds, Harold William, private study.  
Farquharson, James, University of Birmingham.  
Freeman, Mabel, Birmingham Pupil Teachers' Central Classes.  
Fretter, Arthur, Atherstone Grammar School.  
Higley, Harold Reynolds, George Dixon Secondary School, Birmingham.  
Holden, Elsie Eliza, Birmingham Pupil Teachers' Central Classes.  
Jacombs, Mary Elaine, Handsworth Technical School.  
Johnson, Gilbert Ernest, Shrewsbury Grammar School.  
Jones, Edgar George, University of Birmingham.  
Kay, William Henry, Handsworth Grammar School.  
Mason, Florence Mary Ann, Birmingham Pupil Teachers' Central Classes.  
Neal, Edith Rose, Birmingham Pupil Teachers' Central Classes.  
Olorenshaw, Olive Beatrice, Birmingham Pupil Teachers' Central Classes.  
Pinson, Kenneth Bernard, Clifton College.  
Priestley, Percival Thomas, private tuition.  
Rainsford Raymond Gibbs, Waverley Road Secondary School, Birmingham.  
Schofield, Gladys Jessie, Birmingham Pupil Teachers' Central Classes.  
Smith, Dorothy Robina, Leamington Municipal Girls' School.  
Stevenson, John Charles, Atherstone Grammar School.  
Strapps, Minnie Harriet, Birmingham Pupil Teachers' Central Classes.  
Thomas, Samuel Henry, King Edward's School, Birmingham.  
Vaudrey, Randle Henry Neville, Cheltenham College.  
Walker, Agnes Nea, Edgbaston High School.  
Whitmore, Elsie Mildred, Birmingham Pupil Teachers' Central Classes.  
Wilson, Frank Percy, King Edward's School, Birmingham.  
Yeh, Tsin-Hain, University of Birmingham.

## Class II.

- Anderson, Dorothy Winifred, Birmingham Pupil Teachers' Central Classes.  
Balcon, Samuel, George Dixon Secondary School, Birmingham.  
Bill, Oliver Osmund, George Dixon Secondary School, Birmingham.  
Boden, Ada Frances, Birmingham Pupil Teachers' Central Classes.  
Campion, Grace Mary, Birmingham Pupil Teachers' Central Classes.  
Copson, Amelia, private tuition.  
Dunkley, Charlotte Catherine Mabel, Birmingham Pupil Teachers' Central Classes.  
Everton, William Bourne, King Edward's School, Birmingham.  
Follows, Arthur Ernest, George Dixon Secondary School, Birmingham.  
Garbutt, Helen, Birmingham Pupil Teachers' Central Classes.  
Godley, Mabel Emily, Birmingham Pupil Teachers' Central Classes.  
Goodman, Francis, King Edward's School, Birmingham.  
Griffin, Margaret Emily, Birmingham Pupil Teachers' Central Classes.  
Hales, Edward John, Wolverhampton Pupil Teachers' Central Classes.  
Hortin, Edith Harriet, Birmingham Pupil Teachers' Central Classes.  
Howard, Rose Lilian, Birmingham Pupil Teachers' Central Classes.  
Johnson, Florence Gertrude, George Dixon Secondary School, Birmingham.  
Jones, John Christopher, Waverley Road Secondary School, Birmingham.  
King, George, King Edward's School, Birmingham.  
Lyal, Annie, Birmingham Pupil Teachers' Central Classes.  
Mathews, George Vyvyan, University of Birmingham.  
Middleton, John Grove, Queen Mary's School, Walsall.  
Morris, Elsie Kate, Birmingham Pupil Teachers' Central Classes.  
Newman, Fanny, Birmingham Pupil Teachers' Central Classes.  
Nickson, Horace Clarence, private tuition.  
Oldfield, Louise, Birmingham Pupil Teachers' Central Classes.  
Parker, Guy Neville, Clifton College.  
Feters, Elizabeth Lilian, Birmingham Pupil Teachers' Central Classes.  
Pollitt, Dorothy May, Leamington Municipal Girls' School.  
Powell, Clarence Henry, University of Birmingham.  
Pritchard, Charles Rodman, private study.  
Roberts, Ada, Birmingham Pupil Teachers' Central Classes.  
Roberts, Maud May, Birmingham Pupil Teachers' Central Classes.  
Robson, Vivian Erwood, King Edward's School, Birmingham.  
Ross, Lizzie Louise, Birmingham Pupil Teachers' Central Classes.  
Russell, Kathleen Leonora, Birmingham Pupil Teachers' Central Classes.

- Shaw, Eva St. Clair, University of Birmingham.  
 Simpson, Winifred Jane, Birmingham Pupil Teachers' Central Classes.  
 Skinner, Lily May, Birmingham Pupil Teachers' Central Classes.  
 Smart, Gladys Obery, Birmingham Pupil Teachers' Central Classes.  
 Smart, Sarah Jane, Birmingham Pupil Teachers' Central Classes.  
 Smith, Grace, Birmingham Pupil Teachers' Central Classes.  
 Spackman, Charles Lovell, Trent College.  
 Stackhouse, Lizzie Lockerbie, Birmingham Pupil Teachers' Central Classes.  
 Stern, Theodore Henry, private tuition.  
 Stevens, Ida Millicent, Birmingham Pupil Teachers' Central Classes.  
 Thornhill, Ronald Joseph Tennant, Dean Close Memorial School, Cheltenham.  
 Timms, Bertram, Birmingham Central Secondary School.  
 Ursell, Marguerite, Birmingham Pupil Teachers' Central Classes.  
 Waite, Gertrude, Birmingham Pupil Teachers' Central Classes.  
 Walker, Ellen Ada, Birmingham Pupil Teachers' Central Classes.  
 Webb, Millicent Sylvia Gwendolen, Birmingham Pupil Teachers' Central Classes.  
 Wood, Dorothy, Birmingham Pupil Teachers' Central Classes.  
 Wood, Sarah Minnie, King's High School, Warwick.  
 Wragg, Eveline, Waverley Road Secondary School, Birmingham.
- 

SEPTEMBER, 1906.

Class I.

- Baggs, Thomas Alexander, King Edward's School, Birmingham.  
 Bates, Frank Oswald, University of Birmingham.  
 Bruce, Christopher Yule, University of Birmingham.  
 Clayton, Ellen Gertrude, Birmingham Pupil Teachers' Central Classes.  
 Clowes, Fred, Leicester Municipal Training College.  
 Day, Marjorie Elizabeth, Birmingham Pupil Teachers' Central Classes.  
 Dowell, William, Leicester Municipal Training College.  
 Finney, Arthur Frederick, Potteries Pupil Teachers' Central Classes.  
 Ford, Jessie Thompson, Private Study.  
 Goddard, Fred Arnold Vincent, Leicester Municipal Training College.  
 Goodwin, Evelyn Fanny, King Edward's School, Birmingham, and Private Study.  
 Grudgings, Leonard Arthur, Leicester Municipal Training College.  
 Haddon, Newman, Leicester Municipal Training College  
 Hammond, Herbert, Leicester Municipal Training College, and Private Study.  
 Lavender, Frederic Henry Reakes, University of Birmingham.  
 Linnitt, Charles Frederick, Private Tuition.

- Mannall, Rose Esther, Birmingham Pupil Teachers' Central Classes.  
Mathews, Elizabeth Agnes, Birmingham Pupil Teachers' Central Classes,  
Mitchell, Harriet Elizabeth, Leicester Municipal Training College.  
Pinsent, Arthur, Leicester Municipal Training College.  
Pitt, Francis Samuel, Private Study.  
Potts, Edith Potter, University of Birmingham.  
Shen, Buccok, Private Tuition.  
Skan, Kate, Birmingham Pupil Teachers' Central Classes.  
Wilson, Herbert William, Private Study.  
Wright, Ernest Harold, Private Tuition.

### Class II.

- Abbott, William Scott, Oakham School.  
Bailey, Cecil Henry, Private Tuition.  
Bampton, Horace Edgar, King Edward's School, Aston, Birmingham.  
Banks, Reginald William, Potteries Pupil Teachers' Central Classes.  
Bridgman, Archibald John, Private Study.  
Brown, Harold John, Nuneaton Pupil Teachers' Central Classes.  
Chandler, Alfred Lincoln, Solihull Grammar School.  
Cope, Margaret Sylvia Frances, Birmingham Pupil Teachers' Central Classes.  
Davies, James Gordon, Whitchurch Grammar School.  
Doody, Rose Emily Lavinia, Birmingham Pupil Teachers' Central Classes.  
Douglas, Malcolm Bryce, Leicester Municipal Training College.  
Dugard, Percy William, University of Birmingham.  
Earle, Harold Thomas, Bedford Grammar School.  
Eyles, Edward Godfrey, Oakham School.  
Foster, Edith, Leicester Municipal Training College.  
Hadley, Marjorie Christine, Aston Manor Technical School.  
Hampson, Travis, Private Tuition.  
Harris, William Henry, Leicester Municipal Training College.  
Huband, Frederick Percy, King's Heath School and Private Study.  
Jarvis, Ethel Margaret, Leicester Municipal Training College.  
Jewsbury, Elsie, Leicester Municipal Training College.  
Jones, Evelyn, Birmingham Pupil Teachers' Central Classes.  
Kapp, Norman Gisbert, University of Birmingham.  
Leslie, Robert Dunbar, University of Birmingham and Private Tuition.  
Lodge, Raymond, Bedales School, Petersfield.  
Marsh, Roland, Private Tuition.  
Marston, Ethel, King Edward's School, Aston, Birmingham.  
Mawdesley, Constance, Potteries Pupil Teachers' Central Classes.  
Morse, Thomas Riddings, Private Tuition.  
Pigott, Noel Frederick Pemberton, Shrewsbury School, and University of Birmingham.  
Ray, James Ernest, Llandrindod Wells Intermediate School.

- Reavenall, Alfred Cecil, King Edward's School, Five Ways,  
Birmingham.
- Ryley, Charles Field, Bablake School, Coventry.
- Slim, George Edmundson, Private Study.
- Smith, Leonard Warren, Denstone College, and Private Tuition.
- Southwell, Florence Amédée, Birmingham Pupil Teachers' Central  
Classes
- Summers, Owen Heather, Private Tuition.
- Tucker, Norman, University of Birmingham.
- Tunstall, Winifred Maria, Waverley Road Higher Grade School,  
Birmingham.
- Webb, Ellen Harrison, Birmingham Pupil Teachers' Central  
Classes.
- Yeoman, John Clark, King Edward's School, Camp Hill, Birming-  
ham.
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## SCHOLARSHIPS.

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### University.

- 1901. Richard Thomas Francis Kirk.
- 1901. Percy Phillips.
- 1902. Onera Amelia Merritt.
- 1902. Douglas Frank Twiss.
- 1902. Winifred Lee.
- 1904. Arthur Hubert Cox.
- 1905. Mary Louise Bleby.
- 1905. Jacques Katz.
- 1905. Arthur Wellesley Butler.
- 1906. Archibald John Mason-Jones.
- 1906. Clara Emily Sylvester.
- 1906. Wilfred Severne Ashley.
- 1906. Percy Norman Loveridge.
- 1907. George William Todd.
- 1907. Richard Henry Whitehouse.
- 1907. Lilian Emily Fitter.
- 1907. Editha Helena Jennings.

### Research.

- 1902. Percy Phillips.
- 1902. Margaret Mellard Hawkes.
- 1902. Henry Thomas.
- 1902. Caroline Edith Morgan.
- 1903. Percy Phillips.
- 1903. William Ernest Stephen Turner.
- 1903. Frank Ernest Willcox.
- 1903. Winifred Lee.
- 1904. Augustus Daniel Imms.
- 1904. William Ernest Stephen Turner.
- 1905. Francis William Aston.
- 1905. Ethel Mary Reader Wood.
- 1906. Francis William Aston.
- 1906. Evelyn Marion Hickmans.
- 1906. Mary Louise Bleby.
- 1907. Clara Emily Sylvester.
- 1907. Frederick Stoward.

## Heslop Memorial.

1887. William Allport Brockington.  
 1889. John Nelson Wallis.  
 1891. Maud Elizabeth Ward.  
 1893. George Wiltred Samson.  
 1895. Edward William Winckle.  
 1897. Frederick John Marrian Stratton.  
 1899. Egbert Hockey Magson.  
 1900. Egbert Hockey Magson.  
 1901. John Monkhouse Orwin.  
 1903. Robert Viner Stanford.  
 1905. Harold Richard Norton.  
 1907. Arthur Cuthbert Tunstall.

## John Corbett.

1895. Willie Hutt.  
 1896. Arthur James Barnett.  
 1897. John Frame.  
 1898. Ernest Gold.  
 1899. Frederick John Marrian Stratton.  
 1900. Jacques Katz.  
 1901. Jacques Katz.  
 1902. David Wallace Plant.  
 1903. William Frederick Warth.  
 1905. George Wilfrid Acland Green.  
 1906. Sydney William Ledbrook.  
 1907. Ernest William Bliss.

## Theodore Mander.

1903. Evelyn Marion Hickmans.  
 1904. Ethel May Doughty.

## Priestley in Chemistry.

1895. Thomas Stewart Patterson.  
 1895. Thomas Slater Price.  
 1895. William John.  
 1896. Frederick Malcolm Wharton.  
 1896. John McCrae, Jun.  
 1896. John Harger.

1897. Henry Aston.  
1897. Edward Daniel Mason.  
1897. Arthur Lathwood.  
1898. Henry Leonard Heathcote.  
1898. Robert Howson Pickard.  
1898. Bertram Vincent Storr.  
1899. Clarence James Green.  
1899. Arthur Thomas Etheridge.  
1899. Arthur Slator.  
1900. Arthur Slator.  
1900. Robert Crosbie Farmer.  
1900. Samuel Andrews.  
1900. John Alexander Lloyd.  
1901. Norman Leslie Gebhard.  
1901. Caroline Edith Morgan.  
1901. Mary Beatrice Thomas.  
1901. Fred John Warth.  
1902. Norman Leslie Gebhard.  
1902. Ernest Ormerod.  
1902. John Albert Newton Friend.  
1903. Fred Barrow.  
1903. Edward Done.  
1903. Douglas Frank Twiss.  
1904. Fred Barrow.  
1904. Edward Done.  
1904. Herbert Bryan Thompson.  
1905. Fred Barrow.  
1905. Arthur Hubert Cox.  
1905. Robert Viner Stanford.  
1906. Ethel Parry.  
1906. Robert Viner Stanford.  
1906. Charles Gordon Smith.  
1907. Harold Newton Lowe.  
1907. Ethel Parry.  
1907. Charles Gordon Smith.

Bowen in Engineering,

1895. William George Hibbins.  
1896. Blamey Stevens.  
1896. William Arthur Taylor.

1896. William George Hibbins.  
 1897. James Patrick Wood.  
 1898. Alfred Ayre Mellor.  
 1898. Samuel Benjamin Priest.  
 1898. James Patrick Wood.  
 1899. Douglas Howard Bishop.  
 1899. John Ernest Jagger.  
 1900. John Ernest Jagger.  
 1901. Richard Percival Hulse.  
 1901. Connel William Long Alexander.  
 1901. Harry Bryant Matthews.  
 1902. Harry Bryant Matthews.  
 1902. John Keats Catterson-Smith.  
 1903. John Keats Catterson-Smith.  
 1903. John Walter Fidoe.  
 1904. Alfred William Lambourne.  
 1905. Alfred William Lambourne.  
 1905. Thomas Sylvanus Pipe.  
 1905. Ernest William Heathcote.  
 1906. Thomas Morgan Barlow.  
 1906. William Ernest Fisher.  
 1907. Noel Wilson Greenway.  
 1907. Lawrence William Kershaw.

## Bowen in Metallurgy.

1895. George Parker Royston.  
 1896. George Parker Royston.  
 1898. Harry Westwood Waldron.  
 1899. Harry Westwood Waldron.  
 1899. Henry Julius Salomon Sand.  
 1900. Henry Julius Salomon Sand.  
 1901. Leo John Longstaffe.  
 1902. Joseph Herbert Colley.  
 1903. Thomas William Picken.  
 1904. Thomas William Picken.  
 1905. Frederick Dudley Simpson.  
 1906. Gilbert Shaw Scott.  
 1907. Joseph Lawton Dixon.

## 1851 Exhibition.

- 1891. John Joseph Sudborough.
- 1892. Lionel Simeon Marks.
- 1893. Arthur Lapworth.
- 1895. Robert Howson Pickard.
- 1896. Thomas Slater Price.
- 1897. Gilbert Harding Shakespeare.
- 1898. Arthur Henry Reginald Buller.
- 1899. Henry Leonard Heathcote.
- 1900. Frank Horton.
- 1901. Arthur Slator.
- 1902. John Alexander Lloyd.
- 1903. Norman Leslie Gebhard.
- 1904. Percy Phillips.
- 1905. Augustus Daniel Imms.
- 1906. Fred Barrow.
- 1907. Ernest Ansley Watson.

## Ascough.

- 1905. Harold Newton Lowe.
- 1906. Arthur Dane.
- 1907. Horace George Evans.

## Harding.

- 1903. Amy Helen Freeman.
- 1904. Montague Sydney Woolf.
- 1905. Amy Helen Freeman.
- 1905. Montague Sydney Woolf.
- 1905. Thomas Henry Adams.
- 1906. Amy Helen Freeman (*Travelling*).
- 1906. Montague Sydney Woolf.
- 1906. Thomas Henry Adams.
- 1906. Margaret Minna Green.
- 1906. Bernard William Phillips.
- 1907. Montague Sydney Woolf (*Travelling*).
- 1907. Thomas Henry Adams.
- 1907. Margaret Minna Green.
- 1907. Bernard William Phillips.

## Queens.

1894. William Billington.  
 1895. Charles Henry Bullen.  
 1896. William Henry Wynn.  
 1897. Arthur Augustus Russell Green.  
 1898. Leonard Gregory Parsons.  
 1902. Mary Clarke.  
 1902. Joseph Bernard Dawson.  
 1902. Robert Beatson Dennis Hird.  
 1903. Leonard George Joseph Mackey.  
 1903. Arthur Addison Sanders.  
 1903. John Dale.  
 1904. Alfred Ernest Remmett Weaver.  
 1904. Norman John Launcelot Rollason.  
 1904. Frederick Wilkinson.  
 1904. John Dale.  
 1905. Frederick Wilkinson.  
 1905. Herbert Charles Horace Bracey.  
 1905. James Fenton.  
 1905. Mary Clarke.  
 1906. Humphrey Francis Humphreys.  
 1906. John Dale.  
 1906. James Fenton.  
 1906. Arthur Addison Sanders.  
 1906. Reginald Hudson Astbury.  
 1906. Walter Rowland Southall Roberts.  
 1907. James Fenton.  
 1907. John Dale.  
 1907. Herbert Henry Sampson.  
 1907. Oscar Madeley Holden.

## Sands Cox.

1892. William Bird Herapath Wood.  
 1894. Herbert Charles Quirke.  
 1896. Michael Joseph Quirke.  
 1900. Claude Edward Tangye.  
 1901. Francis Brett Young.  
 1904. Humphrey Francis Humphreys.  
 1906. Evan Davies.

## Ingleby.

1892. George Arthur Wilkes.  
1892. John Orton.  
1892. Francis Herbert Marson.  
1893. Edward Geoffrey Walls.  
1894. Frederic Gerald Messiter.  
1895. Alexander Wathen Nuthall.  
1896. Joseph George Emanuel.  
1897. Harold Edward White.  
1897. John Aston Swindale.  
1898. Charles York Flewitt.  
1899. Harry Ellis Brown.  
1899. William Billington.  
1899. Ernest Frederick Wharton Bywater.  
1900. Cyril Henry Howkins.  
1901. William Henry Wynn.  
1905. Frederick Wilkinson.  
1906. Walter Rowland Southall Roberts.  
1907. James Fenton.

## Dental.

1894. Donald Amphlett.  
1895. Charles Carey Wood.  
1896. Cyril Henry Howkins.  
1897. Robert William Griffin.  
1898. Frank Smith Machin.  
1899. Richard John James Hawkes.  
1900. William Charles Retallack.  
1906. Alan Ascough Wilkinson.

## Dudley and District Chamber of Commerce.

1902. Thomas Henry Sanders.  
1903. Thomas Henry Sanders.

## Dudley Education Committee.

1904. Thomas Henry Sanders.

## Walsall Chamber of Commerce.

1903. Frederick Lawton.  
 1904. Frederick Lawton.  
 1905. Frederick Lawton.

## Sunderland.

1904. Henry Ramsay Monro.  
 1905. { Harold Ernest Mott.  
     { William Henry Twigg.  
 1905. Francis Reginald Green.

## Wiggin Metallurgical Scholarship.

1907. Arthur Hague.  
 1907. Frederick Johnson.

## EXHIBITIONS.

## University.

1900. Joseph Bate Bridgwater Booth.  
 1900. Ella Winifred Douglas.  
 1900. Richard Percival Hulse.  
 1900. Frederick John Marrian Stratton.  
 1900. William Wingfield Longford.  
 1901. Ruth Marian Trigg Stanton.  
 1901. Ella Winifred Douglas.  
 1901. Fred Barrow.  
 1902. Fred Barrow.  
 1902. Edward William Tunbridge.  
 1903. Edward William Tunbridge.  
 1903. William Ernest Fisher.  
 1903. Daisy Mary Hood.  
 1903. Helena Mary Jennings.  
 1904. Ernest Assley Watson.  
 1904. William Ernest Fisher.  
 1904. Edward William Tunbridge.  
 1904. Mary Louise Bleby.  
 1904. Mary Eliza Beatrice Smith.  
 1904. Percy Norman Loveridge.  
 1904. Wilfred Severne Ashley.

1905. William Ernest Fisher.  
 1905. Ernest Ansley Watson.  
 1905. Sydney William Ledbrooke.  
 1905. Percy Norman Loveridge.  
 1905. Beatrice Hodder.  
 1905. Ethel Mary Silk.  
 1906. Hubert Frank Gunns.  
 1906. Sydney William Ledbrooke.  
 1906. Ernest Ansley Watson.  
 1906. Lilian Emily Fitter.  
 1906. Mary Grace Mills.  
 1907. Sydney William Ledbrooke.  
 1907. Edgar Algernon Cross.  
 1907. Bucchok Shen.  
 1907. Edith Beddows.  
 1907. Mary Grace Mills.  
 1907. William Thomas Bayliss.  
 1907. Frank Theodore Smallwood.  
 1907. Margaret Minna Green.

## Entrance.

1900. May Gertrude Bach.  
 1900. Ruth Marian Trigg Stanton.  
 1901. Wilfrid Beaumont Ault.  
 1901. Eleanor Hannah Roberts.  
 1902. William Ernest Fisher.  
 1902. Edith Millicent Hill.  
 1903. Percy Norman Loveridge.  
 1903. Ernest Ansley Watson.  
 1904. Edith Dora Bartindale.  
 1904. Lilian Emily Fitter.  
 1905. Edith Beddows.  
 1905. Leslie Morris.  
 1905. Christopher Edward Sonnenschein.  
 1906. Elsie Myra Henningham.  
 1906. Winifred Jane Humpherson.

## Polytechnic Bursaries.

1903. Ettie Gertrude Holloway.  
 1903. Gertrude Emily Owen.  
 1906. Bertram Colgrave.  
 1906. Horace George Evans.
- 

## PRIZES.

## Panton Geological.

1882. Walcot Gibson.  
 1883. Frederick John Cullis.  
 1884. Arthur Woodroffe Manton.  
 1884. Charles William Hobley.  
 1885. Constance Caroline Woodhill Naden.  
 1885. Walter Collingwood Williams.  
 1886. Marianne Mathews.  
 1886. Joseph Landon.  
 1887. Marianne Mathews.  
 1887. Joseph Landon.  
 1888. John Joseph Sudborough.  
 1889. Thomas Crosbee Cantrill.  
 1890. Emily Rosabel Jones.  
 1891. Arthur Percy Maddocks.  
 1891. Maurice Gesundheit.  
 1892. Nicholas George Gedye.  
 1893. Helen S. Lean.  
 1893. Herbert Lapworth.  
 1894. Alfred Brown Ernest Blackburn.  
 1894. Thomas Goode Joyce.  
 1895. Mary Constance Lloyd.  
 1896. Lizzie E. Nazer.  
 1897. William E. Share.  
 1898. Douglas Howard Bishop.  
 1898. William Henry Stacey.  
 1899. Grace Martha Bauer.

## Karl Dammann Memorial.

1891. Marianne E. Suckling.  
 1892. Charles Frederick Clapham.

- 1893. Violet Beatrice Marris.
- 1894. Anne Jane Marchant.
- 1895. Ethel Grimley.
- 1896. Elsie Gertrude May.
- 1896. Jane E. Pemberton.
- 1897. Annie K. White.
- 1898. Edith Shufflebotham.
- 1899. Lizzie Orme.
- 1901. Margaret Mellard Hawkes.
- 1902. Winifred Lee.
- 1906. Amy Helen Freeman.
- 1907. Thomas Henry Adams.

**Ehrhardt Chemical Research.**

- 1894. John Chilwell.
- 1895. Robert Howson Pickard.
- 1896. Thomas Slater Price.
- 1897. John McCrae.
- 1898. Henry Aston.
- 1899. Henry Leonard Heathcote.
- 1904. William Ernest Stephen Turner.

**Bunce.**

- 1901. Elsie Gertrude May.
- 1904. Mary Louise Bleby.
- 1906. Percy Norman Loveridge.
- 1907. Wilfred Severne Ashley.

**Gladstone Memorial.**

- 1903. Lewis Lloyd.
- 1904. Alfred Dudley Evans.
- 1906. Harold Ernest Mott.
- 1907. William Herbert Green.

**Austin.**

- 1904. William Ernest Fisher.
- 1905. Jacques Katz.
- 1906. Clara Emily Sylvester.
- 1907. Lilian Emily Fitter.

## Russell Memorial.

1892. Francis Herbert Marson.  
 1892. Arthur James Martin.  
 1893. Harry Sinigar.  
 1894. Frederic Gerald Messiter.  
 1895. John Crisp Griffiths.  
 1896. Edwin Charles Temple Smith.  
 1898. Wilfred Henry Coltart.  
 1899. William Billington.  
 1901. William Henry Wynn.  
 1902. Frederic Barker.  
 1903. Leonard Gregory Parsons.  
 1904. Alfred Ernest Remmett Weaver.  
 1905. Thomas Charles Clare.  
 1907. Hilda Clark.

## William Richards.

1896. William Percy Nicol.  
 1898. Charles Henry Bullen.  
 1899. William Billington.  
 1903. Leonard Gregory Parsons.  
 1904. Alfred Ernest Remmett Weaver.

## Birmingham and Midland Scottish Society.

1906. Melanie Sophie Forbes.
- 

## GOLD MEDALLISTS.

## Heslop Memorial.

1887. Constance Caroline Woodhill Naden.  
 1888. Ernest Francis Ehrhardt.  
 1891. John Joseph Sudborough.  
 1893. Lilian Evelyn Jenkyn-Brown.  
 1894. Frederick Daniel Chattaway.  
 1895. Thomas Crosbee Cantrill.  
 1895. Arthur Henry Reginald Buller.  
 1899. William Henry Wynn.  
 1900. Frank Horton.

1903. Leonard Gregory Parsons.  
1904. Percy Phillips.  
1904. Alfred Allen Brockington.  
1904. Alfred Ernest Remmett Weaver.  
1906. Connel William Long Alexander.  
1907. Abdul Hafiz.  
1907. Onera Amelia Hawkes.

Constance Naden Memorial.

1890. Frederick Daniel Chattaway.  
1892. Jessie Charles.  
1893. Jane Elizabeth Pemberton.  
1895. George Wilfrid Samson.  
1897. William Henry Wynn.  
1899. George Ernest Darlaston.
-

## THE GUILD OF UNDERGRADUATES.

*President:* G. SHAW SCOTT.

*Vice-President:* N. F. CAVE-BROWNE-CAVE.

*Hon. Secretary:* H. CAIRNS TERRY.

---

The Guild is an organised association of the Undergraduates for the furthering of their common interests, which is provided for by the Charter of the University, and should be the recognised means of communication between the Undergraduates on the one hand, and the Court of Governors, Council and Senate on the other. For this purpose it may at any time petition or make representation to the Council or Senate of the University on any matter affecting the interests of the Undergraduates, while in addition, the Guild has three Representatives on the Court of Governors with the privileges of full members.

There are two annual meetings,—one, which must be held early in the Winter Term, at which the officers for the Session are elected, and another at which the Warden gives an address to the Undergraduates. Other meetings may be called by the Committee for the discussion and sanctioning of steps considered advisable.

## BIRMINGHAM UNIVERSITY ATHLETIC CLUB.

*President:* The Right Hon. JOSEPH CHAMBERLAIN, M.P.

*Vice-President:* Alderman C. G. BEALE, J.P.

*Hon. Secretary:* J. L. RITCHIE.

*Hon. Treasurer:* G. A. SHAKESPEAR, B.A.

---

Membership of the Club is open to past and present members of the University of Birmingham, to past members of Mason College, and to past members of Queen's College, Birmingham. The entrance fee is Half-a-Crown. There is no annual subscription.

All members of the Club are entitled to wear hatbands, scarves, and ties in the Athletic Club colours

(red, blue, and black), but not the blazer, which is specially awarded.

The Club includes the following sections:—Rugby Football, Association Football, Cricket, Hockey, Tennis, Swimming, Golf, and Sports. No one is eligible to become a member of any section unless he has previously joined the Athletic Club. Each Section is managed by its own Committee, which arranges the subscription and awards colours (the latter have to be confirmed by the Athletic Club Committee). The latter Committee consists of two representatives from each Section, a President, Vice-President, Secretary, and Treasurer. The authorities allow the Athletic Club a certain sum, which is allotted to the various Sections according to their needs.

An Athletic Ground has been secured for the University at King's Heath.

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### UNIVERSITY VOLUNTEER COMPANY.

Captain W. E. BENNETT, Commanding.

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The Company belongs to the 1st V.B. Royal Warwickshire Regiment. It is divided into four sections:—1, Medical A; 2, Science and Arts; 3, Engineers; 4, Medical B; and each member is allotted to the section representing his Faculty. Any past or present student of the University is eligible. A Challenge Cup is gained each year by the best section. Shooting at the range is encouraged, and several prizes are offered, both in Battalion and Company competitions. The drills are not numerous, and are held at hours convenient to members attending lectures. The Corps attends the Brigade Camp the first week in August.

There is no subscription, and all uniform, equipment, &c., is provided by the Government. Names of candidates should be sent to Captain W. E. Bennett, 22, Broad Street, or the Honorary Secretary of the University Volunteer Company, the Common Room, University.

## HALL OF RESIDENCE FOR WOMEN STUDENTS, UNIVERSITY HOUSE, 215 HAGLEY ROAD.

### EXECUTIVE COMMITTEE :

MRS. BEALE, *President.*

Miss HODSON. <i>Treasurer.</i>	Miss C. CHAMBERLAIN, <i>Secretary.</i>
Mrs. ASHLEY.	HUME C. PINSENT, Esq.
Mrs. CHARLES DIXON.	Mrs. SONNENSCHEIN.
Mrs. FIEDLER.	Miss LANDON THOMAS (Head Mistress of the Church College for Girls, Edgbaston).
Professor HUGHES.	Miss TARLETON YOUNG (Head Mis- tress of the Edgbaston High School for Girls).
Miss JOYCE.	
Mrs. WILSON KING.	
Mrs. MUIRHEAD.	

Miss S. MARGERY FRY, *Warden.*

---

University House was opened in October, 1904, in order to provide a Hall of Residence for Women Students who desire to follow a course of study at the Birmingham University, but who are not living with parents or friends, and wishing to avoid the isolation and other drawbacks of life in lodgings, or the inconvenience of daily journeys by train.

The Hall is primarily for University Students, but it may also be available for students at the School of Art.

It is conveniently situated in one of the principal thoroughfares of Edgbaston, on which is a good omnibus service, and is supplemented by a small house adjoining the garden. Meals are taken in common in the larger house.

The Hostel is open during the University Session of 33 weeks in the year. Special arrangements will be made for Medical or Day Training Students who have to be longer in residence.

Terms from 33 guineas to 50 guineas per annum, according to accommodation.

A term's notice must be given before leaving, or the fee for the next term may be charged.

Applications should be made to the Warden at the earliest possible date, as the accommodation is limited. All further particulars may be obtained from the Warden,

UNIVERSITY HOUSE,  
215 HAGLEY ROAD. BIRMINGHAM.

**FORM OF BEQUEST TO THE UNIVERSITY.**

---

I BEQUEATH the sum of £ , free of legacy duty, to the University of Birmingham. And I direct that the said legacy and the legacy duty thereon shall be paid exclusively out of such part of my personal estate as may by law be bequeathed for charitable purposes, and preferably to any other payment thereout. And I direct that the same legacy shall be paid to the Treasurer for the time being of the said University, whose receipt shall be an effectual discharge for the same, and that the same shall be applied \* [in the discretion of the Council of the said University to the general purposes thereof, or to such special purposes as the said Council shall determine].

NOTE.—If any special directions or conditions are to be attached to the legacy, the part in brackets to be omitted and the special matter inserted.

## APPENDIX.

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### The Walter Myers Travelling Studentship.

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#### D E E D

ESTABLISHING "THE WALTER MYERS TRAVELLING STUDENTSHIP FUND."

**This Indenture** made the 10th day of December 1901 between THE UNIVERSITY OF BIRMINGHAM (incorporated by Royal Charter on the 24th day of March 1900 and acting with the powers conferred upon them by the Birmingham University Act 1900 and hereinafter called "The University") of the first or one part and GEORGE MYERS of Thornfield Edgbaston in the City of Birmingham of the second or other part. **Whereas** the said George Myers in order to promote original research by a Graduate of the Birmingham University and in memory of his only son Walter Myers M.A., M.B., B.C. of the University of Cambridge and B.Sc. of the University of London and a former student of the Mason University College of Birmingham who contracted yellow fever at Brazil while investigating the causes of such disease on behalf of the Liverpool School of Tropical Medicine hath proposed to give to the University of Birmingham the sum of £3,000 to be held by the University for the purposes hereinafter set forth. **Now therefore this Indenture witnesseth** that in consideration of the sum of £3,000 paid to the Treasurer of the University on the day of the date hereof (the receipt of which sum the University do hereby acknowledge) the Birmingham University for themselves and their successors do hereby covenant with the said George Myers that the Birmingham University and their successors shall stand possessed of the said sum of £3,000 and the securities on which the same shall be from time to time invested and the accruing income of such investments upon the trusts and for the purposes hereinafter expressed and declared that is to say:—

1.—The University shall invest the said sum in any securities on which Trustees may for the time being be authorised by law to invest trust moneys.

2.—The said sum and the investments thereof shall be called and distinguished from the other moneys and investments of the University by the name of "The Walter Myers Studentship Fund" and the University shall at all times hereafter keep an account of this fund and the investments and income thereof separate and apart from the general or any other funds or accounts of the University.

3.—The University shall apply the income of the said investments in payment to the holder for the time being of a Studentship to be called "The Walter Myers Travelling Studentship" of the sum of £150 payable in advance by quarterly instalments such holder to be nominated and appointed each alternate year for one year only. Provided nevertheless that in the case of a student of exceptional merit and ability the University may allow such student to hold the scholarship for a second year but the sum payable to such student for the second year shall not exceed £90.

4.—In case in any year in which the Studentship is offered no candidate shall present himself or herself or in case no one of the candidates shall in the opening of the hereafter mentioned Committee be of sufficient merit to be nominated the income of the Studentship shall be retained by the University and the Studentship offered again in the succeeding year and so on *toties quoties* until a candidate shall be nominated and appointed in manner hereinafter provided. In every case of suspension of the Studentship the income shall be invested and accumulated and if in any year the suspended income and its accumulation shall be sufficient then another Studentship may be awarded annually so long as the income will allow.

5.—The University shall on or before the 10th day of July in each year in which the Studentship is offered advertise the conditions in two Medical Journals

published in London and two newspapers published in Birmingham and shall also print a copy of these presents in the University Calendar in each year.

6.—The Studentship shall be awarded irrespective of sex sect or party but in the case of two applicants of equal merit a native of Birmingham shall have the preference.

7.—The merits of the candidate for the Studentship shall not be ascertained by the results of any form of competitive examination but by a Committee consisting of the following persons namely: The Dean of the Medical Faculty of the University and the Professors of Pathology and Chemistry in the University and the External Examiner in Pathology appointed by the University. The External Examiner shall be Chairman of the said Committee with an original and a casting vote and the Studentship shall not be awarded at any meeting unless the External Examiner is present. Subject as aforesaid the Committee shall ascertain the fitness of the candidate in such manner as they think proper and report to the Council as soon as possible after the first day of October in the year in which the Studentship is offered and the election shall then be made by the Council of the University.

8.—The Studentship shall be tenable at the University of Berlin Frankfort or Freiburg in Baden or at some University or Hospital not in Great Britain or Ireland appointed from time to time by the Council of the University on the recommendation of the Senate.

#### QUALIFICATION OF CANDIDATES.

9.—Every Candidate for the Studentship must be (1) Under the age of thirty years at the date of his or her application and (2) a graduate of the Birmingham University and (3) must have attained the degree of M.B. in such University and the degree of B.Sc. in the University of Birmingham or of London Cambridge or Oxford.

### CONDITIONS OF TENURE.

10.—The conditions of holding the studentship shall be as follows:—

- (a) The holder shall engage in the study of Pathology in Berlin Frankfort or Freiburg or such other place of study not in Great Britain or Ireland as shall be appointed as provided by Clause 8.
- (b) In clinical work combined with pathological research at such Hospitals as the Council of the University on the recommendation of the Senate shall appoint either at Berlin Frankfort or Freiburg or at any other University or Hospital not in Great Britain or Ireland which may from time to time be approved of as aforesaid.
- (c) The student during the tenure of his or her studentship shall not systematically follow any business or profession or engage in any other work which in the opinion of the Council would interfere with his or her researches.

11. In case the student shall publish in any way the results of his or her investigations during the studentship he or she shall where practicable describe himself or herself as the "Walter Myers Student" of the University of Birmingham.

**In witness** whereof the University hath hereunto set its seal and the said George Myers his hand and seal the day and year first aforesaid.

The Seal of the University of Birmingham was hereto affixed by the undersigned duly authorised by a resolution of the Council to affix such seal.

F. C. CLAYTON.  
R. S. HEATH.

Seal of  
University.

GEO. H. MORLEY,  
*Secretary.*

Signed sealed and delivered by the said George Myers in the presence of

G. J. JOHNSON,  
Solicitor, Birmingham.

GEORGE MYERS (L.S.)

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